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Fur & Feather

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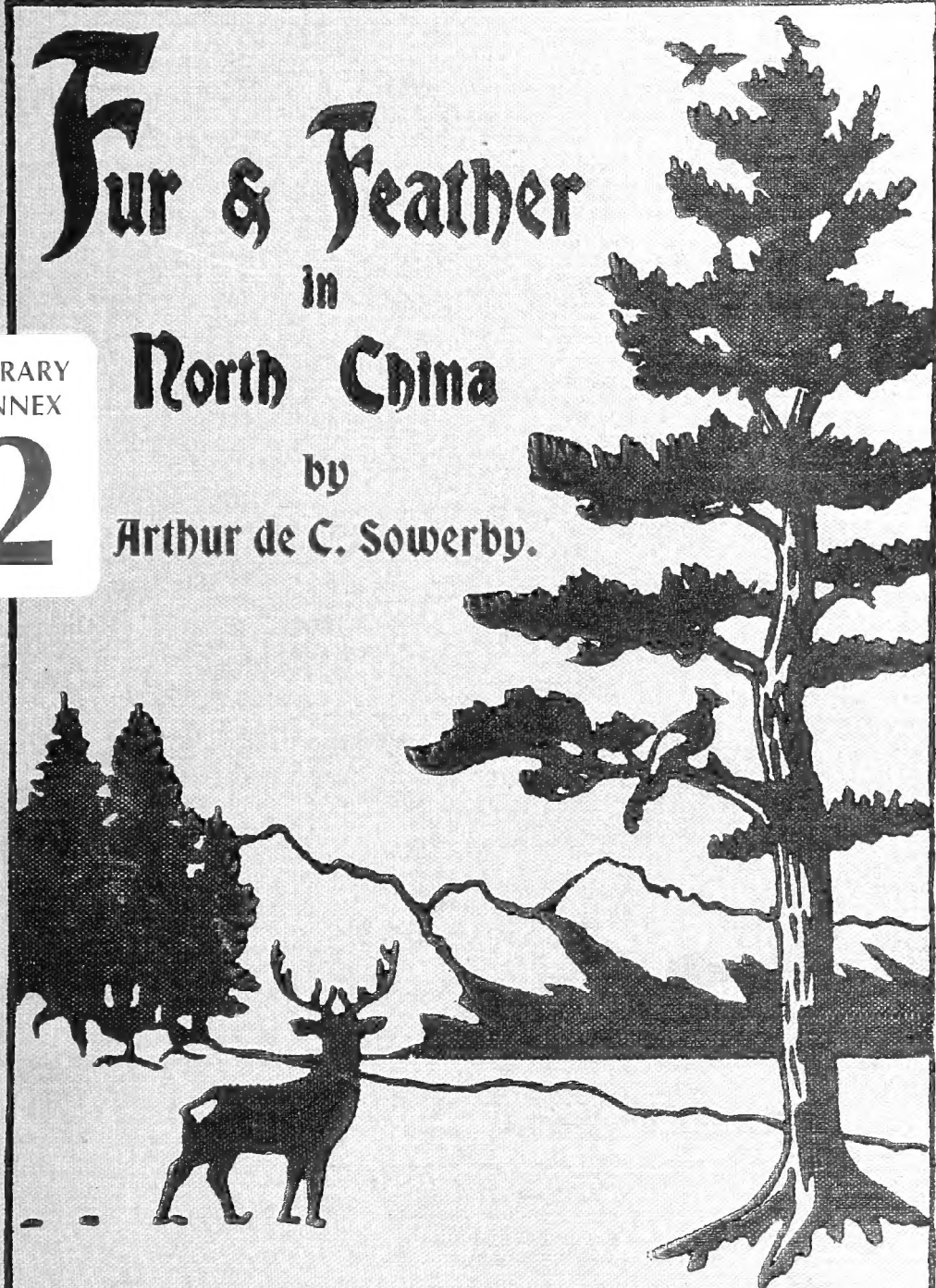
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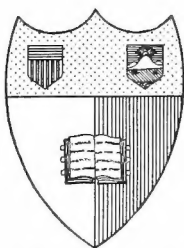
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Arthur de C. Sowerby.

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2





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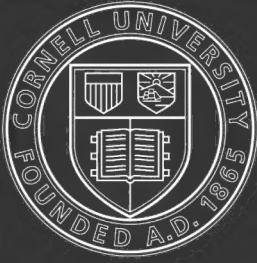
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ERRATA.

Page 49, line 22 for "early" read "nearly."

Page 70, lines 29 and 36, Plate XV, Page 71 lines 9, 10, 12 and 15, for
"Epymis" read "Epimys."

Plate XVI for "*Allactaga*" read "*Alactaga*."

Plate XXI for "*manchuricunn*" read "*mantchuricum*."

Page 121, line 17 for "*Cidemia*" read "*Oidemia*."

Plate XXVII for "*arquatus*" read "*arguatus*."

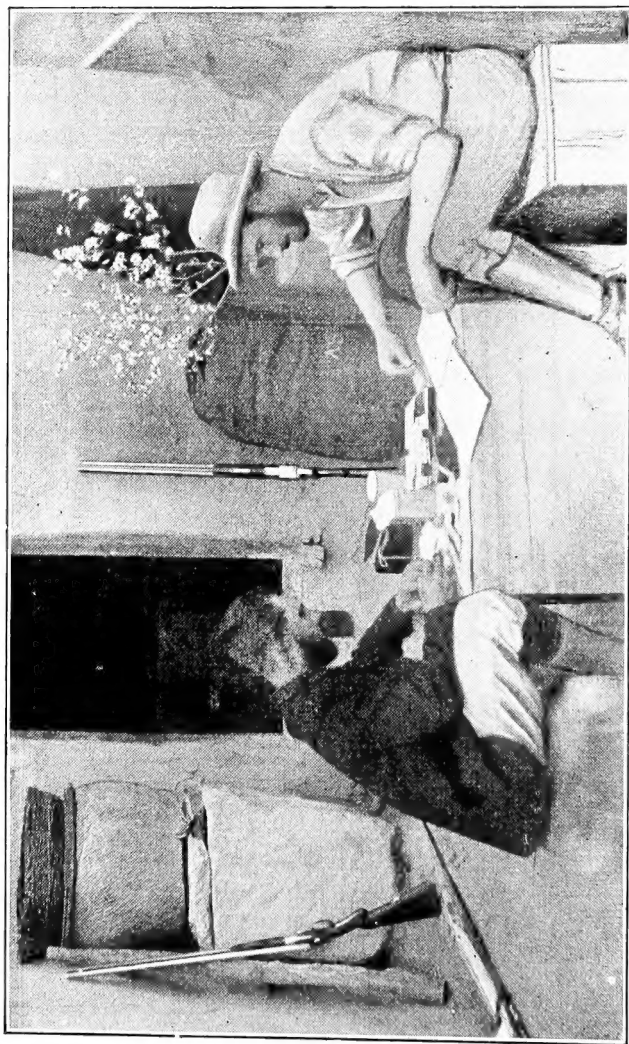
Pages 175 and 189 for "*assotis*" read "*asotis*."

Page 175 "*Elopicthys*" read "*Elopicthys*."

Page 176, line 32 for "*canassius*" read "*carassius*."

FUR & FEATHER IN NORTH CHINA.

TIENTSIN PRESS, LTD.,
— — Printers and Publishers — —
33, Victoria Road, Tientsin, North China.



AT WORK IN THE COUNTRY.

Photo by M. P. Anderson.

FUR AND FEATHER IN NORTH CHINA,

BY

Arthur de Carle Sowerby, F.R.G.S.

Author of "Sport and Science on the Sino-Mongolian Frontier"
and joint author with Robert Sterling Clark of
"Through Shen-Kan."

With 30 line drawings by the author and 43 photographs.

"There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is society, where none intrudes,
By the deep Sea, and music in its roar,
I love not Man the less, but Nature more,
From these our interviews, in which I steal
From all I may be, or have been before,
To mingle with the Universe, and feel
What I can ne'er express, yet can not all conceal."

—Byron

1914.

THE TIENTSIN PRESS, LIMITED, Victoria Road, Tientsin, North China.

To my wife.

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PREFACE

WHEN the papers, which go to make up this book, were first contemplated, it was proposed that they should deal purely with sport. It was felt, however, that there was a very distinct need for some popular work not merely on game birds and animals, but on the whole, or as much as possible, of the North China fauna. Consequently, it was decided to endeavour to meet, if only in a small measure, this need.

The resulting papers, penned sometimes in town, sometimes even on the road, but always with a sad lack of reference works, can not claim to do justice to the great subject. It is hoped, however, that they will serve their purpose until some more detailed and classic work is produced.

One of the chief aims I have had in mind while writing thus on the birds and animals of North China, has been the rousing of public interest in the subject, with a view to the ultimate protection and preservation of many species, which under existing conditions are doomed to extinction. Another object has been to share with those who can not get away into the wilds to see for themselves and to taste first hand of Nature's rich store, some of my own experiences with that sweet Mistress and her many children.

It has proved an untold pleasure to me to write these papers, for my mind has been carried back to many a happy day in field and forest, amid surroundings never so appreciated as in the perspective of time. It has also been a source of education for I have come across new facts, and have been introduced to many species hitherto unknown to me, as I have delved into the riches of by-gone writers in search of the correct names for those that I did know.

The mere fact of my having written these papers has put me into communication with fellow lovers of nature, and has given me access to standard works, so that I have been able to correctly identify most of the species mentioned. I am deeply indebted to Mr. J. D. de La Touche, C.M.Z.S., M.B.O.U., who very kindly allowed me to go over his wonderful collection of Chinese Birds, than which none more complete exist, except that in the British Museum. I am also indebted to Mr. Oldfield Thomas, F.R.S., F.Z.S., of the British Museum, and to Dr. Gerrit S. Miller, of the Smithsonian Institution, for assistance in the identification of many new mammals of North China, while Dr. Morrison, by allowing me access to his magnificent library, enabled me to further identify and verify the names of many of the old ones. The following gentlemen very kindly supplied me with photographs, without which the illustrations would have been far from complete—Dr. P. H. Atwood, Mr. Malcolm, P. Anderson, Captain T. Holcomb and Mr. W. A. Mace. To all these kind friends I wish to convey my heartiest thanks.

ARTHUR DE C. SOWERBY.

Tientsin, North China, July, 1914.

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Other good measurements are $8\frac{1}{4}$ inches in length and 1 inch in thickness, and 8 inches in length and 1 inch in thickness, being those of tusks of pigs shot by Mr. J. Holmeberg and Dr. P. H. Atwood respectively.

Professor E. T. Nystrom, formerly of Tai-yuan Fu Imperial University, records having shot a boar which measured 7 feet from the tip of the nose to the tip of the tail.

The record Indian tusks measurement is $14\frac{3}{4}$ inches; the record European one 13 inches. The largest pigs are found in the Caucasus, where specimens weighing as much as 600 lbs. have been recorded.

The record height belongs to India, where a fine old tusker was killed, which measured 40 inches at the shoulder.

In China, as elsewhere, the wild boar commits terrible depredations upon the crops of the country folk. It is nothing to see a field of peas or potatoes completely devastated by a sounder of wild swine in some of the more mountainous regions. The natives have great trouble in guarding their crops, as the pigs soon learn not to fear the primitive guns in vogue in these remote districts.

The wild pig is very prolific, old sows producing as many as fifteen young in a litter. The mother builds a nest of hazel stems, carefully laid over a deep hollow. Here she produces her brood, the young remaining in this shelter for some days after they are born. After leaving the nest they stay with the old sow for about six months, by which time they are half grown and thoroughly capable of caring for themselves.

In winter the coat is long and very bristly, with a thick woolly under fur. In summer this is dropped, and in the autumn a new soft coat appears, which grows very rapidly into the bristly winter covering.

In Shansi during the last few years the wild pig has been greatly on the increase. This winter (1913-14), however, an epidemic has spread through the country, killing off whole sounders at a time. The natives of the districts have, of course, taken full advantage of this bountiful supply of meat, and a good many pigs, which have died thus have found their way into the game markets of Tientsin. A similar epidemic occurred some years ago, absolutely depleting certain sections of country of their stocks of wild swine. These epidemics do more to keep down game than a good deal of shooting, but that is no excuse for the wholesale and indiscriminate slaughter that sometimes goes on.

Of the habits of the pig there is very little to say. In North China they seem to prefer well forested areas, or at least districts where there is ample cover. They are particularly fond of woods and copses

Plate I.

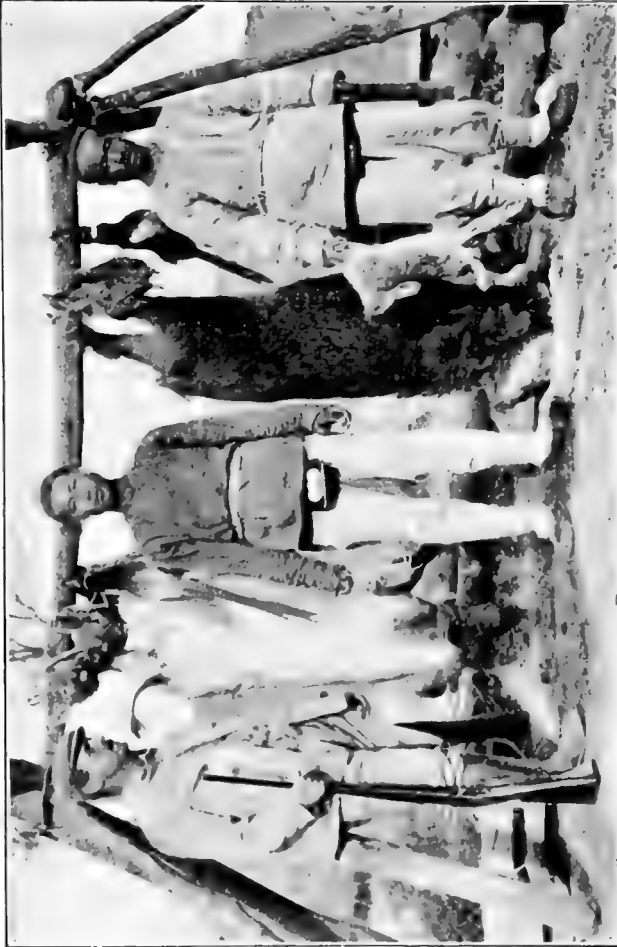


Photo by Dr. P. H. Atwood.

DR. P. H. ATWOOD AND BAG OF BOAR, ROEDER,
HARE, PHASANTS AND PARTRIDGES MADE IN
WEST SHANSI.

of scrub-oak. They also favour sunny slopes, well protected with pines and spruce, where in winter they may lie up during the day. In summer they resort to watery ravine bottoms for their daily siestas. They feed at night, coming out of their lairs late in the evening and usually returning before daylight.

The wild boar is to be found only in the more mountainous parts where it can find plenty of cover. Such country exists in the north of Chih-li, north and west of Shansi and in many places over Shensi, right out through Kansu to the Thibetan border. As a rule wherever the wild pig exists at all it is very plentiful, but its nocturnal habits make it difficult to meet. However, by gaining a knowledge of the habits of the animal and the sort of cover that it prefers, it becomes possible to search it out during the day.

By far the best thing to do after reaching the hunting ground is to explore the country side for pig wallows. These can not be mistaken when found, being hollows, often six or seven feet long by three wide, the edges of which rise several inches and sometimes a foot above the surrounding ground. When the earth in these looks newly thrown up then the hunter can rest assured that the pig is not far off, and he should visit the place each day making as little noise as possible so as to get near to his quarry before it takes alarm. Otherwise the pig will hear him long before he is near and will slip quietly away to find shelter elsewhere.

Once having sighted a pig it needs only accurate shooting, good legs and lungs, and an obstinacy equal to that of the animal itself to finally bring it down.

That a pig, though severely wounded, will often lead the hunter on a long, tiring chase can be gathered from the following experience.

Early in January of 1910 I was hunting in some magnificent mountains about a hundred miles north-west of Tai-yuan Fu in Shansi, and had been following the trail of a wounded tusker all one morning. This pig had been shot two days previously by a native hunter, and on the evening of the day before had run into my boy while he was setting traps in a small ravine. The boy being unarmed, the pig made good its escape into a dense forest. As I have already said we followed the tracks all the next morning, but finally lost them in a dry and stony ravine, nor could we pick them up again. Accompanied by a native hunter I was searching for the lost trail, when we ran across a fresher but smaller track. This we followed and it lead us through a beautiful pine forest, over the top of a ridge and down into some dense thorn bushes on the other side. As we entered the latter there was a

rustling of bushes ahead of us followed by a dead silence. Just as I was about to start down hill the hunter clutched my sleeve and pointed across the ravine, and there some 200 yards away was a fine pig hurrying up the bare hillside. I was somewhat out of breath with my recent climbing but there was no time to be lost and I took aim and fired. The hunter declared that the pig was hit, but except for a slight diminishing in his speed, I could see no sign to prove that my bullet had found its mark. Next moment the pig had reached the top of the ridge and disappeared. We rushed down the hillside regardless of thorns, and torn clothes, and climbed the opposite slope. On reaching the top two spots of blood on a rock told us that the pig was hit.

Then began a long and arduous chase. Following the trail with difficulty we skirted round the head of one ravine, crossed a ridge at the top and descended into a wood where the pig was once more put up. With an angry grunt it broke away down hill, and again we saw it climbing the opposite slope. This time we could see a dull red patch on the flank. I tried some more shots and had the satisfaction of seeing the pig fall and lie kicking. We thought the chase was ended, but had reckoned without our quarry. The pig suddenly scrambled to its feet once more and continued up hill till it again crossed the top and vanished. This ascent was worse than the last one and must have been some four or five hundred feet. At last we reached the top, but found that the trail of our pig had got mixed up with several other recent ones. I sent the hunter along one of the freshest and chose another myself which led along the side of a ridge. Presently there was a blotch of blood in one of the foot prints, and I knew I was on the right scent. I hurried along through the pines and larches, and presently became aware of my quarry standing amongst the trees some twenty yards above me. I could see the evil look in its wicked little eye, but, before it could make up its mind whether to charge or to seek safety in flight, I had sent a bullet through its neck, just behind the ear and it dropped. Even then it made desperate efforts to rise, so I was obliged to send a revolver bullet into its heart. On examination I found that the pig had been hit in the flank, had had the right leg shattered and had got a ball lodged in the right fore foot, but in spite of these wounds had led me a chase of some two miles over country of the roughest and most difficult nature.

The following narrative is another example of the endurance of these animals. It was in the same country as that which I have just mentioned. For some days there had been persistent reports of a large sounder of wild swine lead by an enormous white boar.

Several people declared to me that they had seen the herd, and they one and all described the leader as being perfectly white and as large as a cow. I searched in vain for this sounder, till one day, after a long and fruitless hunt in some wild and heavily timbered mountains to the north, I was passing through a little village on my way back to camp, where my wife awaited me with a nice supper of grilled venison. The natives told me that the sounder I had been seeking in the forests of the high mountains had just passed the village, and one young man offered to lead me in the direction the pigs had gone. All thought of supper vanished, and with renewed energy we set off over some low hills. After about half an hour's climb seven or eight pigs were sighted feeding in a field on the other side of a wooded ravine. None of these answered to the description of the big white leader, but as daylight was rapidly failing I decided to try my luck with a long shot at one of the pigs we could see. Accordingly I made my men hide behind some bushes, while I advanced towards the sounder to get within range. I had not gone far when suddenly from behind a rock there emerged what appeared to me to be the largest pig I had ever seen. It looked perfectly white and seemed to my startled imagination to be more the size of an elephant than a cow. It advanced towards me with majestic tread sniffing the air for danger as it came, and behind it crowded several smaller pigs. I advanced more cautiously till suddenly the pig caught sight of me and halted. It was now or never, and, although the range was rather long for my Winchester, I tried a shot. My first bullet struck too high, causing the huge brute to jump round, where it stood undecided. The second shot hit it in the flank, causing it to tear away at a breakneck speed. I fired several shots at it as it ran, managing to hit it in the shoulder just before it disappeared over the top of the hill. Summoning all my remaining strength, I followed at the best speed I could command, and was rewarded on gaining the top of the hill by seeing my quarry not more than a hundred yards away, walking along a path that lead round the top of a ravine. I was just able to take rapid aim and fire as it rounded a shoulder of rock. It did not reappear, and hurrying along the path I was delighted to find that the last shot had proved fatal and the huge animal lay dead at the bottom of a small water course. Half an hour later it was pitch dark and we had our work cut out to get the day's bag home. It was not white but very light grey, and its measurements exceeded those of any pig I have yet seen, being six feet three inches from the tip of the snout to the tip of the tail, and two feet eight inches at the shoulder. It weighed three hundred and ten pounds which was ten pounds

lighter than an old tusker I killed the previous autumn near Yen-an Fu in Shensi. This latter animal gave me a good run requiring four bullets to finish it.

It will be gathered from these two narratives that the mountainous nature of the country in which they live renders impossible any other method of hunting these pigs than by shooting them. The method employed in India and elsewhere of running down and spearing the wild boar would be quite out of the question in North China.

Pig hunting with the aid of the rifle is naturally a far less dangerous sport than when the spear is used. Nevertheless one can have some exciting moments.

On one occasion accompanied by two natives I succeeded in driving some seven or eight pigs out of a dense pine wood at the top of a wide valley. The pigs ran down the side of the valley and took shelter in a clump of stunted oaks. Sending the natives up above them to drive them out I waited below. The men missed their bearings and came upon the pigs in such a manner as to cause the whole herd to break cover and come thundering like a troupe of cavalry straight towards me. Fortunately, however, they swerved to right and left when within a few yards of me, and I managed to hit one as it rushed past. The wounded animal broke away from the rest of the sounder, and tried to cross the valley, so that I was able to knock it over as it was climbing the opposite slope.

Winter is undoubtedly the season for pig hunting as the chase is altogether too arduous for the hot weather, while the foliage of the summer and autumn increases the difficulty of finding the quarry, and of keeping it in sight when put up. Few of the residents of North China can spare the time required to hunt the wild boar, as it often takes a week or more to locate the game after one has reached the hunting ground, but once having gleaned the necessary knowledge of the country one can enjoy good shooting. I once managed to get three pigs in four days, and on another occasion bagged a fine tusker and two roedeer in twelve hours. My companion on that occasion also shot two roedeer.



AFTER PIG.
CAMP IN THE MOUNTAINS OF WEST SHANSI



E. H. CARTWRIGHT AND THE AUTHOR WITH
RECORD WILD BOAR (333 LBS.) (*Sus moupinensis*).

CHAPTER II.

ROE, MUSK AND SIKA.

OF all forms of sport there are few that can excel that of deer stalking. In none are the patience, quickness of eye and wits and the endurance of the hunter more severely tested.

In North China there are several species of deer, but by far the commonest, and the only one easily accessible to Europeans resident in the Treaty Ports is the roe. This little deer is well beloved by local sportsmen, for it affords them their chance of indulging in a sport, which in most countries only the wealthy and leisured classes can enjoy.

Not only is the roe a shy and timid creature but it is gifted with the most delicate organs of hearing and scent; while its sight is also remarkably keen. Its speed excels that of any other denizen of the mountains, and its protective colouring renders it very hard to detect. In winter the roedeer assumes a yellowish-grey pelt that harmonises and blends perfectly with the leafless bushes and withered grass; while in summer this coat is exchanged for one of a bright rufous colour, which in turn so exactly resembles the moistened patches of bare loess, that the hunter often fails to detect his quarry, though it be in full view.

A point in favour of the hunter is the excessive curiosity of the roe, which makes it desirous of ascertaining the cause of any unusual sound or sight, instead of seeking safety in flight. I have known a whole herd stand and gaze at the hunter, apparently fascinated by the report of his rifle, and once when I was hidden in some bushes on the fringe of a forest clearing, several roedeer, that I had startled by the rustling of the leaves and twigs, approached to within easy range of my rifle in their endeavour to find out the cause of the noise.

Another advantage that the roe inadvertently gives the hunter is by barking, but usually when a roe barks it means that the stalk has been discovered, and before long the deer will be well out of harm's way. Moreover it never betrays its presence thus except when it is under cover of some friendly wood.

In North Shansi, on the edge of the Mongolian Plateau and in Manchuria the native-hunters attract these deer by whistling with

a piece of grass held between the thumbs. The ensuing note resembles very closely the shrill bleat of the young fawn in distress, hence its attraction. This seems a cowardly advantage to take of the poor creature, however.

Various methods may be adopted in hunting the roedeer, the most sporting of which is plain stalking. In the mountainous and forested country that this animal frequents there are numerous grassy slopes between wood and wood, and it is these that the hunter should haunt in search of his quarry. In the morning and evening the roe leaves the shelter of the woods in search of food, and then it may often be seen in droves of five or six quietly grazing on the rich luxurious grass. It is then that the utmost resources of the hunter are called into play, for he has to creep with infinite caution towards his quarry, taking care to approach it up wind, and making the very best use of such slight cover as the tall grass and few stunted bushes offer. With care it is even possible to approach feeding deer in the open, without any cover; but in this case the greatest vigilance must be kept upon their movements. The object of the stalker is to appear to be a rock or stump or some such inanimate object. The deer must not see the slightest movement, so that advance can only be made while the animal has its head down in the grass. Each time the deer's head goes up all movement must instantly cease till it goes down again. As a feeding deer raises its head to look round every few bites, the tediousness and fatigue of such a stalk can be imagined; but when, having approached to within range, fired and hit, the hunter looks down upon a nice pair of horns, he is amply rewarded, and looks upon those weary anxious minutes in the light of a great achievement. If by any chance during the stalk the quarry is startled and begins to make off, unless the range is too great, it is just as well to try a shot, as the report sometimes brings the fleeing animal to a standstill; while a misdirected bullet will often turn a deer towards the hunter. If there is a herd and one buck is knocked over, it is often possible to secure a second, as the rest frequently return to their wounded or dead companion. In this way I once secured two nice bucks from a small drove of three, after a successful stalk up the bare slope upon which they were feeding. The first buck, hit through the chest, came rolling down the slope. The other two at first made off, but turned back and stared at the first. Even when they saw me they only entered the sheltering wood a little way, where they stood till I came upon them and accounted for the second buck.

As an example of roedeer stalking the following narrative may prove interesting.

Plate III.



A MORNING AND EVENING'S BAG IN SHANSI.

THE LATE MR. G. A. GRANT ON LEFT: AUTHOR ON RIGHT.

BAG:—ONE WILD BOAR (320 LBS). FOUR ROEDEER.

A party of us were travelling through Shensi, and had reached a belt of wild country south of Yen-an Fu, where the once cultivated terraces had gone back to wilderness. Here roedeer and small game were extremely plentiful, while there were not wanting signs of wild boar, wolves and even panthers. Already the members of the party had had splendid sport, seven deer having been accounted for in two days. On the third day two of us were riding behind the caravan, which was winding along the top of a high ridge, when we saw a roedeer quietly feeding in a deep valley on our left. As we would soon be out of the wild country, and both wished to add another deer to our bag, we decided to go after this one. Accordingly we turned off the road, and tying our ponies in a thicket, we crept down a water cut, keeping well out of sight of our quarry. Jimmy, my pointer, insisted on following, and dutifully kept close at my heels. Without much difficulty we reached the shoulder of a ridge, which we had to cross. Now we had to exercise the utmost care, for the bare slope was in full view of the deer. Good luck was with us, for during our passage the deer did not raise its head once, and soon we dropped silently down into the tall brush of the valley. It was all I could do with fiercely whispered injunctions to keep Jimmy from dashing off, for he, too, had spotted the deer. Each step brought us nearer to our quarry, which we glimpsed now and then through gaps in the underbrush. Twice we found ourselves up to our armpits in deep snow drifts. At last, after crossing a bare terrace flat upon our bellies, we arrived at a low hedge which I had noted as being within twenty yards of the deer, and I gave the sign to my companion to be ready. As we cleared the sheltering scrub up bounded the deer from almost under our feet. Bang! bang! went our rifles, and the buck sprang into the air, turned a somersault and lay dead. On the instant another buck broke cover, and again our rifles rang out. It staggered, but recovered itself and was crashing away through the bushes when Jimmy, unable to restrain himself another moment, sprang forward. With a few bounds he overtook the wounded deer and springing for its throat brought it down headlong in the snow.

A method of hunting the roedeer, which has been tried with great success by one local sportsman in the forests of West Shansi, is that adopted in the Phillipines and elsewhere where the jungle or forests are too dense for open stalking. This is with the use of a flash lantern, fastened in the cap or on the right wrist, so that the beam of light is directed forward along the rifle barrel. This method can only be used at night, when any deer within two hundred yards, looking towards the light betrays its presence by the bright reflection from the

retinas of its eyes. The sights of the rifle are also lighted up so that it is easy to take accurate aim. The bright light always has the effect of arresting the quarry and rooting it to the spot, giving ample time to take aim. In this way six or seven roedeer were bagged in a few days.

Another method, which may be adopted in country where, owing to deep snow, the going is bad and stalking impossible, is driving. In company with three other local sportsmen, I enjoyed some very good driving two years ago (Jan. 1912) in the Hsi-wan-tzu district east of Kalgan. The process was simple. A likely looking wood would be chosen, and each member of the party would be stationed at some advantageous point outside. The beaters would then go round and commence driving from the other side of the wood. Always a deer or two would break cover and give one or other of us a chance of bringing it down.

Up to the present two distinct species of roedeer have been described from North China. The one found in Shansi, Shensi and Chihli has been called *Capreolus bedfordi*, having been described from a specimen from West Shansi, as being slightly larger than the European form. It also has much better horns, which increase in length in the individuals as one works northward. The horns of the North Shansi roedeer approach more nearly to the Thian Shan roe (*C. tianshanicus*). One pair I measured were $17\frac{1}{2}$ inches in length, while I have measured several that have been close on 1 foot, some a little more, some less. The longest West Shansi horn I have measured was 10 inches. The record Thian Shan roehorn is $18\frac{1}{2}$ inches.

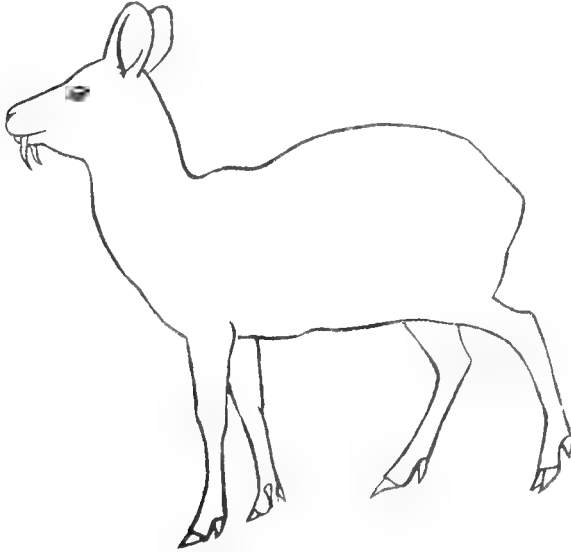
The other Chinese species is one discovered by the writer in Kansu. It was named *C. melanotis*, being described as more reddish than *C. bedfordi* in its summer coat, and having the outer surface of the ear mostly of a clear black colour, which is not the case in *C. bedfordi*.

The largest species of roedeer is *C. pygargus*, which comes from Siberia. The largest horns come from the Thian Shan.

Roedeer are common almost anywhere where there is a reasonable amount of cover, and a small human population. They are particularly plentiful in Shensi, North and West Shansi, and in some of the wild country north of Peking. In Manchuria also they are very abundant.

The females often have two young. The males shed their horns from November to December. The new growth commences in February, the velvet is rubbed off by the end of May, the rutting season commencing in August.

From September to November is the best time for roe deer hunting. The horns are then in good condition, and the hair is not so liable to drop as at other times. One can also enjoy the pleasure of having a nicely roasted haunch or grilled steak for dinner. Earlier in the summer, though the horns are good, the smell of the deer sets one against eating the flesh. The meat should always be allowed to hang for a few days, which of course is impossible in the warm weather.



THE MUSKDEER (*Moschus sibiricus*).

MUSK.

In many places, chiefly in heavily forested and mountainous country, where the roe is found the musk deer is also prevalent. It is a pretty little creature, considerably smaller than the roe, has no horns, but is armed with long tusks, which grow down, like those of the walrus, from the upper jaw. These only occur in the male, which is also slightly larger than the female. The tusks attain a length of about 3 inches. At least four species of musk have been identified. Two of these occur in the Himalayas and Sze-chuan, so that they scarcely come under our heading. These are *Moschus moschiferus* and *M. chrysogaster* respectively. In Kansu and Eastern Thibet a species called *M. sifanicus* occurs, while the Shansi and Chihli species is known as *M. sibiricus*. The last is a very dark variety, having a thick coat of a dark brown, with a fine cream-yellow irregular patch on the throat. *M. sifanicus* is distinctly greyer in appearance the brown hairs having a white ring towards the tip.

The musk stands about 20 inches at the shoulder. The hoof is proportionately much smaller and more pointed than in other deer, while the two hinder nails or dew claws are proportionately much larger. The ears are large; the tail short. The characteristic for which this little deer is chiefly known, is the occurrence in the male of a little bag in the skin of the abdomen, which contains the substance known as musk. For this the musk deer is unmercifully persecuted and hunted, for the substance is extremely valuable. A single pod, is worth from \$10 to \$20 to the hunter, who sells it to the medicine shops, where it is made up into perfume and realizes twice the money paid to the hunter.

Just exactly what function this gland performs in the economy of the musk deer seems uncertain. There is little or no smell in the secretion when fresh, so that it can hardly be for the purpose of attracting the females.

As a sport musk deer hunting is scarcely to be considered. So persecuted is the little creature that it keeps to the densest cover, from which it may only be driven with the greatest difficulty. It is also becoming increasingly rare. The natives of this country hunt the musk chiefly by driving, the same method being used as with roedeer. When there is plenty of snow they also resort to tracking. The Szechuan hunters use snares. A stout sapling is bent down over a musk deer path, and a rope with a noose is attached to the tip. The noose is then set in the path in such a way that the little creature is almost sure to step into it. A trigger is loosed, the sapling flies up, and the deer is jerked into the air, where it hangs till the hunter comes and kills it. Often they hang thus for days before merciful death frees them from their agonies. By far the greater number of musk are taken this way. The method has the disadvantage of killing off males and females indiscriminately, whereas your true Shansi musk hunter would avoid shooting a doe. Some years ago I reached a famous musk district in West Shansi, and found the local hunters in a furious state of mind over the depredations of a party of Szechuan hunters, who in a few weeks had secured some seventy musk deer, mostly females, in their snares. Driven to exasperation the Shansi hunters had at last combined and sent the Szechuanese about their business.

The musk like the water-deer of the Yang-tze Valley can be knocked over easily with bird shot. The white ivory tusks of a good buck make the head a nice trophy.

SIKI.

Another deer, which is to be found in certain restricted areas of Chihli and Shansi is the Pekin sika (*Cervus hortulorum*), sometimes known as the Pekin Stag. This is perhaps the handsomest deer in North China, especially in the summer, when its rich red coat spotted with white makes it a most elegant creature. It is a large deer, having



THE SIKI (*Cervus hortulorum*).

very good horns, the record measurements of which are 2 feet 8 $\frac{1}{4}$ inches in length. Usually there are eight points, though a ten pointer has been recorded.

In Manchuria a very closely allied, though smaller species occurs, under the name of *C. manchuricus*. Other species occur in Japan,

Formosa and along the Yang-tze Valley. The horns of these deer conform to the elaphine type, but differ from those of the red deer and wapiti in having no bez-tine.

The Pekin sika is of a dark grey-brown in the winter, the white spots becoming almost invisible. A full grown stag stands about 4 feet at the shoulder. These deer are also greatly persecuted on account of their horns, which when in velvet are worth more than those of any other species. Manchurian sika horns have been known to fetch as much as Tls. 200 and Tls. 300 per pair.

At present the Pekin sika is known to occur only in a few very remote and inaccessible districts in North-eastern Chihli and in Western Shansi. There used to be a good many in the Imperial Hunting grounds near Jehol, but since the Manchu soldiers were camped there a short time ago, the country seems to have been cleaned out of all kinds of game—including the beautiful Reeve's pheasant.

SSU-PU-HSIANG.

It would not do to close a paper on North China deer without mentioning the famous Ssu-pu-hsiang or David's deer (*Elaphurus davidianus*). This remarkable deer was first discovered by Pere Armand David in a semi-domesticated state in the Imperial Hunting Park at Peking. This Park was thrown open in 1900 and all the deer in it killed by the International troops. So far as the writer can gather the elaphure has never been recorded in a wild state. Some living specimens (doubtless taken from the Nanhai-tze in 1900) have been exhibited in Europe and a few stuffed ones occur in the South Kensington and Paris Museums. Where the species originally came from is not known, nor does it seem likely that it will ever be found in a wild state.

The Ssu-pu-hsiang stands about 4 feet, is of a light yellow-fawn colour and has a long tail like that of an ox. The nose too, is pointed and more like that of a sheep than a deer. The most peculiar feature are the antlers, which instead of having brow tines, have enormous tines growing backward from close to the base of the beams. The latter go almost straight up finally branching, so that the total number of tines is six.

It is all these peculiarities that have led to the Chinese giving it the name Ssu-pu-hsiang, which means literally "not like four." They say it is like, yet unlike the horse, like, yet unlike the ox, like, yet unlike the deer, like, yet unlike the goat.



THE AUTHOR AND THE LATE MR. G. A. GRANT,
WITH BAG OF ROE, HARE AND PHEASANT
IN SHANSI.



A NORTH SHANSI ROE-DEER (*Capreolus bedfordi*).

A FINE HEAD:—Length $11\frac{3}{4}$ inches.

Spread $9\frac{3}{4}$ inches.

CHAPTER III.

WILD SHEEP.

Do you know the world's white roof-tree, do you know that windy rift,

Where the baffling mountain-eddies chop and change?

Do you know the long day's patience, belly-down on frozen drift,
While the head of heads is feeding out of range?

It is there that I am going, where the boulders and the snow lie,
With a trusty, nimble tracker that I know.

I have sworn on oath, to keep it on the Horns of Ovis Poli
And the Red Gods call me out and I must go.

Kipling.

No one who has not experienced it can form more than the faintest idea of what "the long day's patience, belly-down on frozen drift" while waiting to get a shot at the "head of heads feeding out of range" means.

Day after day the hunter goes out, and climbs the steep and rocky ascents to the sheep range: he crosses wind-swept uplands, white with the driven snow: he scales treacherous precipices, jagged with needles and spurs of crumbling granite: ever with his trusty glasses to his eyes he keeps spying, spying, spying, till one day he sees on some far distant ridge a ram bearing the "head of heads" he is seeking. Immediately he is seized with an overwhelming desire to have that head at all costs. If luck is with him, he may secure it in the next two hours; or he may have a long tiring day's work before he gets it; or it may take him days and even weeks. Men have gone mad in the pursuit of such a head, others have broken themselves in the endeavour to answer this, the most powerful call of the Red Gods. Those who survive it and come out triumphant will be changed men,—the more so the longer and harder the chase. Perhaps the change will not be noticeable to the outside world, but from that time on he will never look upon life in quite the same way. The creature he followed and shot will become

increasingly sacred to him. That head becomes a fetish, and all his life his heart will beat quicker and the hot blood go surging through his being, as he recalls the memory of those days of toil, hours of almost agonized stalking and that final supreme age-long moment of suspense, as he took aim, pressed the trigger and awaited the result of his death-messenger. And who can describe the agony, the terrible stinging regret, that must last a lifetime, when that proud head, held high as ever, is born swiftly away and away never more to be seen except in bitter memory? That is sheep hunting.

To the Pamirs, to the Rocky Mountains, to the Himalayas and the Altai, men have gone in search of wild sheep, the varietal of all game. Through privation, hardship, toil and exposure they have attained their ambitions, and many a fine head, gracing a stately hall, tells the story of their endeavours.



It has fallen to the lot of but few Europeans to shoot the wild sheep of North China. The animal itself is undoubtedly the rarest of its kind inhabiting but a few isolated areas. It is being driven out by the great northward flow of Chinese settlers, that is also driving back the Mongols.

It is mercilessly hunted by the natives, while there have been Europeans who have not been above taking unreasonably heavy toll from its fast diminishing numbers. One man, has gone so far as to

offer so much per head to the native hunters, with the result that in the last two years some dozens of good rams have been killed, out of a district that contains not more than about a hundred rams all told. So far only two or three districts, all of very restricted area, have been discovered containing these sheep. Under these circumstances it is the duty of every European and American, who is fortunate enough to visit these districts to hold himself in strict control, and to be content with his two or three head.

There are a good many different species of wild sheep, but this paper will be confined to those inhabiting Asia, particularly that part of Asia adjoining China.

Of the large type to which the North China sheep (*Ovis jubata*) belongs, there are five distinct species, ranging from the Pamirs to Siberia. The most westerly species bears the well known name of *Ovis poli*, and was first discovered by Marco Polo. This species is characterized by the great length and wide spread of the horns in the ram. The spiral is more drawn out than in any other species. It inhabits the high Central Asian steppes known as the Pamirs, and has probably been more hunted by Europeans than any of the other species.

Next to this comes *Ovis hodgsoni*, which inhabits Thibet, and is characterized by the massiveness of its horns, together with the extreme compression of the spiral. The horns grow abruptly back, their ends often coming flush with the animal's nose, so that they have to be kept worn down in order that their bearer may eat. On this account long horns are the exception.

A third, and perhaps the largest species is found in the Thian Shan and Altai Mountains. This is known as *Ovis littledalei*, named after its discoverer. Very few of this species have been shot by Europeans.

The fourth species is *Ovis ammon*, with which *O. hodgsoni*, and *O. jubata*, are often confused. It is an inhabitant of Mongolia and Siberia.

Ovis jubata, the North China species was first discovered north of Peking, and described by Peters in 1876. Since then it has pretty well been lost sight of, till within the last ten years it was rediscovered in North Shansi, by whom I do not know. The first specimens I saw of it were brought down to Tientsin in 1906. One of these was an enormous head, of which I have not seen the rival, and my regret is that I did not measure it.

This sheep seems to have been driven out of the district north of Peking, and at present is only definitely known to inhabit North Shansi.

It is a really magnificent animal, and it is possible that it may yet be found to be the largest species of all.

Up to the present the greatest measurements obtained are:—length of horn 52 inches; basal circumference of horn $19\frac{1}{2}$ inches; height at shoulder $45\frac{3}{4}$ inches. This compares favourably with the records of the other four species, which are as follow:—

Ovis poli:

Record length of horn 75 inches.

Record basal circumference of horn $16\frac{3}{4}$ inches.

Record height at shoulder 46 inches.

O. littledalei:

Record length of horn $62\frac{1}{2}$ inches.

Record basal circumference $19\frac{3}{4}$ inches.

Record height at shoulder, not given.

O. hodgsoni:

Record length of horn 75 inches.

Record basal circumference $18\frac{3}{4}$ inches.

Approximate height at shoulder 42 inches to 48 inches.

O. ammon:

Record length of horn 62 inches.

Record basal circumference 19 inches.

Approximate height at shoulder 42 inches to 48 inches.

It will be seen from these measurements that the horns of *O. jubata*, have a greater basal circumference in proportion to their length than any of the other species. It must be remembered that as only a comparatively few of the North China and Thian Shan sheep have been measured, it is highly probable that much larger heads exist. As it is these two species hold the records for basal circumference of horns.

The American Bighorn (*Ovis canadensis*) and the Kamschatkan wild sheep (*Ovis nivicola*) are considerably smaller than these Central Asian giants. Their records are respectively:—length of horn $50\frac{1}{2}$ inches, basal circumference $18\frac{1}{2}$ inches, and length of horn $39\frac{1}{4}$ inches, basal circumference $14\frac{3}{4}$ inches. In the case of the American Bighorn, a great number of heads have been secured and measured, so that the record is probably well established and hard to beat. A full grown ram averages not more than 38 inches at the shoulder.



THE WILD SHEEP OF NORTH CHINA.
(*Ovis jubata*).



THE AUTHOR WITH HIS BEST RAM.
Length of horn:—50 inches.
Girth of horn:— $17\frac{1}{2}$ inches.

The wild sheep of North China is of a dark fawn grey colour, with a very pronounced white croup disc, and cream coloured legs. The hair is thick and in places inclined to be woolly. There is a well developed mane, while the hair on the front of the neck is long. In very old rams the shoulders and back become flecked with white. They are very deep in the chest, light in the quarters, with long slender, though powerful legs. The tail is very short, being marked above with dark brown, which is connected with the brown of the back. The head is held erect, there being a tremendous development of the neck muscles and vertebrae to support the enormous weight of horn.

The country inhabited by *O. jubata* consists of rugged mountain ranges radiating from extensive grassy and rolling uplands. These mountains average about 7,000 ft. in altitude, which is not very high for sheep. They rise abruptly from the plain, which is not more than 2,500 ft. above sea level. This gives a rapid ascent of over 4,000 ft., no mean climb if taken in a single day.

The sheep scatter in small herds all over the ridges, retiring to the uplands when pursued. In summer the old rams retire to the high back ranges, though the ewes and young rams stay on in their usual haunts.

The rutting season is in October, the young being born in April and May. When in combat over the ewes, two rams will back off from each other, lower their heads and charge. The impact is terrific as the two masses of horn, driven by several hundred pounds of bone and muscle, crash into each other. The battered condition of many horns testifies to the fierceness of the conflicts, which may be heard a considerable distance away. When one ram is beaten, he seeks safety in flight, the victor following up his success by running behind and butting the vanquished one in the rear, till he is well out of the way of the herd, over which the fight has taken place.

The rams are in best condition just before and during the rutting season, when also they are most reckless and easily hunted. Subsequently they leave the ewes, and go off together in twos and threes. Very old rams usually become solitary, keeping aloof from their kind the greater part of the year. When three rams are seen together it may be noticed that the largest acts as leader. He is followed closely by the smallest, while the second in size, being more independent usually lags in the rear. In a large herd of ewes under the guidance of an old ram, an old ewe generally leads the way, while the ram herds the rest, keeping them all in front of him. Only

when danger presses will he step up and take the lead. This is also the case with antelopes and some deer.

The speed and agility of these sheep is remarkable. They will travel over the roughest country, down almost perpendicular cliffs, leaping from crag to crag as easily as a pony gallops down the last quarter in the trials.

Though their hearing and sense of smell are highly developed, they are chiefly remarkable for their keen sight, to which they trust more than to anything else. Thus in stalking them, though it is well to keep to lee-ward and to move as silently as possible, it is much more important to keep out of sight.

The flesh of this animal is excellent, especially that on the ribs and hind quarters. Naturally the flesh of the ewes is more tender and sweet than that of the rams. The skin is used in making leather and rugs, being worth Tls. 2.00 a piece.

My first experience of this splendid animal was in the spring of 1912, when with three European companions I visited the mountains round Kuei-hua-ch'eng. Two of my companions had already visited the district and had secured some nice trophies. Leaving the town we struck into the mountains and pitched camp about five miles up a deep and rocky ravine, down which flowed a clear stream, and where we were fairly well sheltered from the terrible storms that rage through those mountains at that time of year.

From here we hunted in every direction. Usually we split up into two parties, each taking a native hunter along. In this way we covered a good deal of country, but were not very successful. The season was a bit late, and though we saw plenty of big rams they were very wild. Only two of us succeeded in getting good heads and we finally gave up hunting, and moved off to new grounds in an attempt to get other game.

My second visit to this district took place in the winter of 1913, and from a hunter's point of view was much more successful and enjoyable. This time Captain T. Holcomb of the U. S. Marines accompanied me, and we had some really fine sport.

The weather being too cold for tents, we found lodgings at a little hamlet situated at the base of the mountains, in the mouth of one of the long valleys leading right into the heart of the sheep country. In this way we had the choice of two routes into the hunting grounds, one, a stiff climb up the two thousand foot ascent at the back of our hamlet, the other a ten mile tramp up the rocky valley with its half frozen stream. In any case several stiff climbs

and many miles hard marching, were necessary to get at the sheep, so it mattered little, which path we took. My companion usually preferred the stiff climb to begin with, while I kept to the valley route. This naturally set us to hunting in different sections of country, so that we did not interfere with each other.

The first day, however, we both started together up the "white trail" as we called the very conspicuous path that lead up the mountain side. This trail can be seen from the eastern and south-eastern boundaries of the Kuei-hua-ch'eng plain, fully forty miles away.

Arriving at the top, just an hour after leaving camp, we continued along one of the great ridges leading to the uplands. On our way we sighted a small herd of ewes, which gave us a splendid chance of testing our rifles, but we were after royal game, and let them go. On reaching the grassy uplands, one of the Mongol hunters spied two rams standing away off on the crest of a ridge. As it was my companion's first experience of sheep hunting I suggested that he should try to get up to these rams, one of which we could see by our glasses, had a fine pair of horns.

Accordingly we separated. I had not gone far when Holcomb's rifle rang out, and looking round I saw a large herd of sheep breaking away to the west. I took one rapid shot, but failed to find a mark, and as the herd was well on its way up an opposing slope I reserved my fire for something more certain.

Those shots seemed to set all the game in the country moving. First a large covey of partridges rose from almost under my feet, and sailed off on whistling wings. Then a herd of six roedeer came bounding out of a little hollow in front of me, and swept away to the north. Next instant, from out a deep ravine to the east, where I had secured my first good head, walked a herd of sheep led by two old rams. This was what I sought. A ram with a herd was bound to be a good one.

Making my two shikarees crouch down in the long grass, I got out my pocket telescope and ascertained that both rams carried good horns, the second being slightly the larger. Obviously they were rivals for the ownership of the herd, and as such would be easier to stalk than lone rams, or those without a harem.

We were a long way from the sheep, but kept perfectly still till they had crossed a ridge and disappeared over the main divide. Then carefully noting the lie of the land, and the direction of the wind, we cut across the slopes to head off the herd. The sheep had not been really scared, and we guessed that they would move slowly,

once they were across the ridge. As a matter of fact they descended the shady slope about half way, and then stopped to feed.

In less than half an hour we were peeping cautiously over one of the side ridges at the unsuspecting animals. The big ram was lying down, while his ewes fed all round him. The other ram had crossed the valley, and stood like a sentinel on a small spur of rock. This rendered stalking quite impossible as each ram, kept watch, as it were, for the other, and either taking alarm would warn the other.

We decided to lie and wait for a change that would be more favourable, but after a most uncomfortable hour, during which we slowly chilled down to numbness in the biting wind, there was no change in the positions of our quarry, except that the sentinel across the valley, had settled himself comfortably to enjoy his daily sun bath, and several of the ewes had joined their lord, and lay quietly ruminating by his side.

I did not care to risk a long shot, so finally decided to get nearer. If only I could cross a small coverless stretch at the bottom of the main valley I could creep up to within easy range. In any case, if the sheep took alarm, and moved off, they would probably offer me a better chance of stalking them. I crept slowly down to the grassy stretch, which I tried to cross, but the moment I showed myself the old ram rose to his feet, and started off to where the other ram kept watch. This animal also took alarm, and before long every sheep was out of sight in a side ravine on the north of the main valley. I hurried to get to a favourable spot, but before I could do so the leading ram appeared on the next side ridge. Sinking down behind a boulder, I waited till the herd rounded the shoulder into the next side ravine. Then I hurried up the slope, arriving at the shoulder just in time to see the herd cross the main ridge. Now, however, they seemed to have got over their fears once more, and were moving slowly, grazing and playing with each other as they went. They crossed a wide gentle slope, and entered another side ravine. This time they did not reappear till I was well within range, and gave me the chance I sought. Drawing a bead upon the big ram, who stood end on to me, I pressed the trigger. A spirt of dust rose from the slope in front of his nose. He turned and dashed away, followed by his herd of ewes, while I lay in the grass, cursing the eagerness, which had made me forget that my rifle carried high at close range. All my care in stalking, had gone for nothing; my patience in the cold north wind was wasted. The day was far spent: there was nothing to do but go home,—empty

handed. When, oh when, would I learn to think before pressing the trigger?

We started homeward depressed and chilled, when suddenly came one of those turns in fortune, when the fickle Dame seems to take pity on the one she has flouted, and gives him one more chance. On rounding the shoulder, we spied the herd away on the shady side of a distant ridge. By rights we should never have seen that herd again, but there it was, and the sheep instead of fleeing with those long graceful bounds, that take them over the hillsides eight feet at a jump, were standing gazing along their back-trail.

Dropping out of sight, we doubled round the hill top, crossed a grassy slope, skirted the sunny side of the ridge on which we had seen the sheep, and topped it between two rocky crags. There, sure enough, was the old ram with two ewes, still foolishly gazing along their back-trail. This time I made no mistake, and almost as I pressed the trigger I heard the thud of a bullet which has found its meat.

Once more the ram dashed off, vanishing into the next hollow and reappearing on the next ridge. The next time we saw the herd, there were only the ewes. A few minutes later I was bending over my prize, admiring the head, which bore the longest horns I had yet measured. Dame Fortune had indeed showed her smiling face, like old Sol bursting through a rift in the thunder clouds.

The horns measured 50 inches in length, and had a basal circumference of $17\frac{1}{2}$ inches. The old ram stood 44 inches at the shoulder and must have weighed at least 300 lbs. It was all the hunters could do to pack home, hide, horn, and the four quarters.

By six o'clock we were back in camp. Soon the Captain turned up with a nice head, so that we entered a successful day in our diaries.

Next day I shot a wild goat, and my companion secured a second ram, but as we each wanted one more ram we decided to stay on a little longer.

The weather turned in bitterly cold on the following day, and I experienced one of the hardest, and most disappointing days of my life. Owing to the extreme cold the bolt of my rifle refused to work with sufficient force to discharge the cartridges. Not realizing this, but putting it down to defective cartridges I kept on. I had the terrible sensation of coming upon four different rams, with a useless gun in my hands. The annoying thing was that after I had pulled the trigger several times, and the sheep had taken alarm, and were pretty well out of range, the rifle usually began to work.

On reaching camp, long after dark, after an eleven hours' tramp over rocky ridges, across wind-swept uplands, and through deep snow drifts, we found that Holcomb had secured a good head early in the day.

Next day, however, luck was mine once more, for within two hours of leaving camp, I had sighted a herd of sheep, stalked it and secured the ram. He was a good sized animal, and I was now satisfied. In shooting him, one of my bullets passed clean through his chest, and dropped an old ewe which was running beside him. This was an unusually large specimen, standing nearly as high as the ram, and having 18 inch horns.

After this we gave up hunting sheep, and decided to move on to other country after wapiti and wild goats.

An account of wild sheep in China is not complete without some reference to the burhel (*Ovis nahura*), a small wild sheep, which occurs in South-western Kansu. This sheep is of a grey-brown colour, with black markings upon the legs and belly which otherwise are cream. The horns, instead of curving in a circle like the other wild sheep, take a backward turn, giving the head more the appearance of a goat's. A very good description of this sheep is given in Frank Wallace's "Big Game of Central and Western China."

CHAPTER IV.

WAPITI HUNTING.

OVER two centuries ago, when white men first penetrated the continent of North America, they found a magnificent deer, akin to, yet far larger and finer than the Scotch red deer. To this animal they erroneously gave the name of elk, by which it is still often called. The proper name is wapiti, for the word elk applies to the large deer with palmated horns of Scandinavia.

In certain areas of North America, wapiti swarmed in countless thousands, but in time the ruthless, destroying hand of the white settler well nigh swept them out of existence.

For a long time it was supposed that deer belonging to this type were only to be found in this continent, excepting of course the red deer in Europe, but within the last few decades Europeans, who have succeeded in reaching the vast almost uninhabited wilds of Central Asia have discovered deer, almost as fine, and every whit as sporting as the American animals, in the Thian Shan, Siberian and Manchurian wapitis.

In still more recent times several species of wapiti have been discovered within the confines of the Middle Kingdom, and to-day those who can afford the time may stalk this lordly deer in his native haunts in Kansu, Szechuan and North Shansi.

Much discussion has taken place as to the status of the different Asiatic species hitherto described, but it is now almost universally agreed that there are at least the following ten distinct species:—

The Kashmir Stag (*Cervus hanglu* or *cashmirianus*) from Kashmir.

The Bactrian Wapiti (*Cervus bactrianus*) from Turkestan.

The Yarkand stag (*Cervus yarcandensis*) from Eastern Turkestan.

The Shou (*Cervus affinis*) from South Thibet and North Eastern India.

Thorold's Deer (*Cervus albirostris*) from Thibet, North of Lhasa.

The Siberian Wapiti (*Cervus asiaticus*) from Siberia.

The Thian Shan Wapiti (*Cervus songaricus*) from the Thian Shan.

The Kansu Wapiti (*Cervus kansuensis*) from Kansu.

The Szechuan Wapiti (*Cervus macneilli*) from North-western Szechuan.

The Manchurian Wapiti (*Cervus xanthopygus*) from Manchuria.

All of these are large handsome deer, with horns, that vary in shape, length and thickness, but conform to the elaphine type (red-deer type).

For the present, however, we need be concerned only with the last four species, as belonging more especially to the Chinese fauna. Of these the Thian Shan wapiti (*C. songaricus*) is undoubtedly the largest rivalling the American wapiti (*C. canadensis*) in the length and number of points of its horns. The record measurements of the horns of the latter species are as follows:—length along beam $70\frac{1}{4}$ inches, circumference $14\frac{1}{8}$ inches, widest spread 68 inches. The best records hitherto secured of the Thian Shan wapiti are:—55 inches in length, 8 inches in girth, with thirteen points. These measurements it will be seen are far less than the American records, but it must be taken into consideration that while thousands of American wapiti have been shot and measured, the number of Thian Shan stags shot up to date can almost be counted on the fingers of one hand. The same applies to most of the Asiatic species.

The next in size to the Thian Shan wapiti is the closely allied Kansu wapiti (*C. kansuensis*) described as a distinct species within the last two or three years. The only records I can find of this deer are those of two stags secured on an expedition into Western China carried out by Mr. George Fenwick-Owen in 1911. The measurements of the best stag are:—length $43\frac{1}{4}$ inches, circumference $5\frac{1}{2}$ inches, widest spread $38\frac{1}{2}$ inches. This stag had eleven points. His companion Mr. H. F. Wallace, who describes the hunting of these deer and other big game in his book "Big Game of Central and Western China," secured a stag, whose horn had a circumference of $5\frac{3}{4}$ inches. These deer were secured in the Min Chou district of South-western Kansu.

Of the Szechuan wapiti (*C. macneilli*) no horn measurements have yet been published that I know of, the species having been described from a doe.

The Manchurian wapiti (*C. xanthopygus*) is an animal differing from the western forms in having a greyer coat and shorter but comparatively stouter horns. Its record measurements are:—length $33\frac{1}{4}$ inches, circumference $5\frac{3}{4}$ inches, widest spread $21\frac{1}{2}$ inches.

This deer inhabits the heavily forested districts of Kirin and Heilung-chiang, and, like the others, is much persecuted for the sake of its horns, which, however, are considered of a superior quality.

In North Shansi a wapiti is found, which up to the present has not been definitely identified as belonging to any of the species already

Plate VI.



Photo by Captain T. Holcomb

THE NORTH SHANSI WAPITI.

CAPTAIN T. HOLCOMB AND HIS TWELVE POINTER.

mentioned. It is a fine animal carrying splendid horns, and having characteristics pertaining to both the Kansu and Manchurian species.

Thus its horns approach more nearly to those of the Kansu wapiti in length, while they are much thicker and heavier.

The only records are those of a magnificent twelve pointer recently shot by Captain T. Holcomb of the U. S. Marines. They are:—length 41 inches, circumference $9\frac{1}{2}$ inches, widest spread $29\frac{1}{2}$ inches.

In colour this deer is of a rich reddish-brown in the summer, while in winter it is of a fine grey-brown in adults, changing into almost silver-grey in the very old bucks. There is a considerable amount of silver-grey on the head, which with the darkening on the nose and the fine horns makes it a very handsome trophy. In this characteristic it approaches more nearly to the Manchurian wapiti, the more western forms being distinctly browner in colour. The light patch on the rump, or croup disc as it is called, is not white as in the Kansu and Szechuan forms, but of a light sandy yellow colour, and is surrounded by a conspicuous black band, which runs down to the base of the tail, and also has a tendency to continue up the back as a median dorsal line. The tail is of the same colour as the croup disc. The legs are of a pretty mouse-brown colour, darker on the anterior surface. The chest and belly are dark brown, almost black. In this feature it differs from the Kansu wapiti. In short, the North Shansi wapiti appears to be an intermediate form between those from Manchuria and those from Kansu.

My own experience with wapiti has been confined almost entirely to those found in North Shansi, but judging from accounts written by others, who have hunted them in Kansu, the Thian Shan and elsewhere, they are all much the same in habits, so that the following notes may be said to apply more or less accurately to the whole group.

The country inhabited by the wapiti in North Shansi borders that over which the sheep range, and is even more rough and precipitous with very much less of the rolling grassy uplands. It is dotted over with sparse birch woods in which the deer seek cover, certain woods and ravines being more favoured by them than others, doubtless on account of the proximity of permanent supplies of fresh water.

The few small herds that exist wander from one to another of these favoured spots over wide stretches of country. In winter the deer lie up during the night and for a couple of hours at noon, feeding in the morning and afternoon. During the warmer months they travel during the night and feed very early in the morning and late in the evening, while they lie up in well shaded woods during the whole of the day.

In the autumn after the antlers have dried and the velvet has been rubbed off against the tree trunks, the rutting season commences, and then the big stags begin to send forth their roaring challenge, and fight desperate duels with each other, the successful ones gathering large harems round them. By the end of November the bucks begin to leave the hinds and go off in twos and threes. Then the herds are led by old hinds, and gradually split up, till in the spring (May when the fawns are born their mothers may be seen in twos and threes like the bucks. The fawns are pretty little creatures of a reddy-fawn colour spotted with white. Just before they are born their mothers are hunted unmercifully, as at this stage of their existence the little creatures are considered most valuable as medicine. A month later the big bucks come in for their share of persecution, for their horns are in velvet, and are then worth from Tls. 30 to Tls. 80 per pair to the Chinese apothecary. (Manchurian wapiti horns are worth double this figure). The horns are then called "shueh chiao" (blood horns) by the natives, while hartshorn is known as "lujung" (deer wool). This product is considered by wealthy Chinese to be of the utmost efficacy, and they spend large sums of money upon it.

It is difficult to say whether this popular appreciation of the medicinal worth of hartshorn is favourable or otherwise to the preservation of the wapiti. From my own experience I am inclined to look upon it as a blessing in disguise, for, as far as the Shansi deer are concerned, it provides them with a very long close season and a comparatively short open one. I found that the majority of native hunters, so far from hunting the deer when their horns are not in velvet, resent outsiders doing so. I have always found it extremely difficult to secure hunters who would guide me to the haunts of these deer and the sika, and have been led on many a fruitless chase. I also found this to be the case in Manchuria, though in places like Kansu and the regions westward, where wapiti still seem to be plentiful, and where the natives cannot fall back on farming during the rest of the year, the wapiti is certainly hunted without intermission. It is these districts which supply by far the greater part of the big demand for hartshorn, and huge caravans of mules and camels laden with horns, dried as well as in velvet, may be seen coming in from these western regions.

In hunting the wapiti various methods are adopted. In Manchuria advantage is taken of the stag's habit of rolling in certain spots in the open glades of the forests, and pitfalls are made. Pitfalls are also made along the deer-paths in the woods. If by any chance a

deer is taken alive and uninjured, it is carefully kept, and the horns, if it be a male, are shorn off annually when they are at the right stage of development. If it be a female it is kept for breeding purposes. In many places there are large deer farms.

In Shansi the native hunters resort to driving, several men with guns being posted round a wood, wherein the deer are known to be hiding, while others beat through it towards the guns.

In Kansu and westward stalking or lying in wait for the deer seem to be the favourite methods employed by the natives.

To the European these methods do not appeal. Activity being the essence of his existence, he prefers to go after his quarry, track it to its lair, or stalk it on the open hillside and finally risk all on a difficult shot, rather than make sure of it, by having it driven to him, while he sits comfortably in some sheltered nook or shady dingle.

A good many Europeans have hunted the Asiatic wapiti, but it would be almost safe to say that the number of those who have shot the Shansi wapiti does not exceed half a dozen; indeed it is my belief that these deer were not definitely known to inhabit this region till two years ago, when certain Europeans in Kuei-hua-ch'eng were told of their existence. Subsequently in the spring of 1912 a party of four foreigners, of which the writer was one, discovered them in the mountains west of that city. Having secured a couple of specimens for the Smithsonian Institution, we decided to leave them alone as they were in very poor condition, trusting that at some future date fortune would bring us to the same country at a more favourable season.

My hopes in this direction were realized in the winter of 1913, during a trip, already referred to in my paper on wild sheep. Captain Holcomb and I were fortunate enough to discover a good stretch of wapiti country, where we secured several nice trophies. A description of our experiences will give the reader some idea of the splendid sport to be had in the chase of this lordly creature.

We arrived, after a hard journey, at a little village, nestling in the shelter of a deep and narrow valley, one day early in December, with a chill north wind blowing and a leaden snowy sky overhead. We had hoped to get further up the valley, but the semi-frozen condition of the rushing mountain stream prevented this, and we were glad to accept the hospitality of a friendly villager, who placed two good rooms at our disposal.

Engaging some local hunters we started early next morning for the deer grounds. The wind had increased overnight, and now came whistling down from the north with a knife-like edge, that penetrated

and chilled to the bone. For three hours we faced it steadily, our path growing rougher at every step. Several roedeer and a wild goat were seen, but excepting the latter, at which a few shots were fired, they were left alone. Presently, as we neared the head of the now rapidly ascending valley, we glimpsed our first wapiti standing on an open hillside gazing at us. Seeking cover behind some scrub, we got out our glasses, and made out that the deer was a buck with fairly good horns. There was no chance of stalking him, so we both tried a long shot but missed. He turned and vanished over the ridge. Next instant two more deer broke cover, and we fired bringing first one and then the other down. On hurrying to the spot where they lay, we were chagrined and ashamed to find that in our excitement we had shot a couple of does. We were hardly to blame for this, however, for, at the range we had shot them, it had been impossible to make out the horns on the buck without the aid of glasses. There was nothing for it but to skin the deer for museum specimens and then go after the buck.

After the unpleasant job was over, and one of the hunters had been dispatched to camp with the skins, we discussed the best way to secure the buck, and finally I left my companion to follow up its trail, while I cut across country in search of other game. I drew blank and after a long, tiring tramp returned to camp. On the way back I shot a large roedeer with an unusually fine pair of horns.

My companion, after we separated, crossed the grassy upland and finally came upon his quarry lying down in what is known as a "yard," a place, usually in a well sheltered wood, specially favoured by deer as a dormitory and playground. He successfully stalked the stag and wounded him in the leg. Then followed one of those long heart-breaking chases across country, but finally he got his chance, and brought down the animal with a well directed shot at long range.

Next day we went off in different directions, but my luck was out, and I did not even see a wapiti, while Holcomb ran on to the trail of a large stag, followed it up, and came upon his quarry quietly feeding in an open glade, surrounded by fifteen hinds. At the fourth shot he brought the splendid animal down. It had a magnificent pair of horns, the measurements of which I have already given.

After this my companion devoted his time to hunting wild-goats, while I kept on in the hopes of securing a wapiti with good horns.

Next day, leaving camp before it was light, with the hunters at my back I set off towards the wapiti "yard" where Holcomb had wounded his first buck. It was empty, so we struck off over the snow-covered uplands.

Plate VII.



Photo by Captain T. Holcomb.

THE NORTH SHANSI WAPITI.

CAPTAIN T. HOLCOMB AND A SIX-POINTER.



NORTH CHINA GORAL. (*Urotragus caudatus*).

Before long we came upon the fresh trail of a large herd of deer, and followed it up. It lead us several miles in an easterly direction and then turned southward along the eastern side of a massive ridge, ribbed with side ridges and deep wooded ravines. Suddenly out of one of these two large bucks appeared, one with a good pair of horns. They did not seem frightened, but crossed the adjacent ridge into the next ravine. With bated breath we crept to the spot where they had vanished, but could not see them for the dense birch brush. Sending the two hunters into the woods, I took up a commanding position near the head of the ravine. However, the only game that came my way were a couple of roedeer and a herd of twelve wapiti does. Finally I saw the blue smoke of a fire curling up from a spot in the woods, and descending to it, found my hunters having their lunch. They said that the two bucks had broken cover and gone out at the bottom of the ravine, a most unusual thing.

After we had satisfied our cravings for food, we picked up their trails, and followed them back into the first ravine. Before long we saw them just topping the crest of the opposing ridge. They crossed it and disappeared once more, and there was nothing for us to do but follow, though by now we were pretty tired, and the sun was fast slanting westward. Over the top of the ridge the trail turned back towards the west, and I knew that the deer were heading for the "yard," we had visited earlier in the day. As straight as an arrow the tracks led, while we followed, and at last we came in sight of the wood. There sure enough, with my glasses, I could make out a great stag lying in the snow. We ducked out of sight, dodged round the crest of a low ridge, followed down the gentle hollow and, when, about opposite to the place where the deer were lying, crept stealthily up to the shoulder. In the gathering gloom I could make out what appeared to be a large deer with good horns lying within about 150 yards of me. Taking a careful aim I fired. The deer rolled over, and I was about to give vent to my feelings in a joyous shout, when up rose the form of a huge stag with spreading antlers, such as any sportsman might wish to own. One moment he stood gazing in my direction, and then with head low, and horns held back to avoid the branches, he commenced to run through the birch trees. I fired several shots. His pace slackened, but he gained the shoulder of the ridge. There he stood with the last rays of the setting sun lighting up his superb antlers, and his hot breath coming in clouds of vapour. Steadying myself, and taking more careful aim, I pressed the trigger, there was a click but no report. Magazine and chamber were empty. Next instant the stag vanished over the ridge, and though I did not know it, I had lost my last chance

of getting a big wapiti. We hurried across to the yard where the smaller buck lay. He jumped up and ran, but my second shot brought him down once more. Leaving the hunters to skin this animal I hurried on to pick up the big stag's trail. I was sure I had hit him, but the trail I found bore no testimony to this effect. The sun had set. Darkness would be on us in half an hour, and we were fully ten miles from camp. I felt sure that I would be able to pick up and follow the trail of the big wapiti next day, and doubted not that I would find him at no great distance, so decided to return to camp forthwith. As we set out with the skin and head of the small stag, the last glimmer of daylight faded away, and we had a long tramp in the dark, finally arriving at our village tired out, but full of hope for what the next day would bring us.

We were doomed to disappointment, however, for though we found the trail easily enough, it soon got mixed up with half a dozen others, just as fresh. When at last, after infinite pains we had unravelled the tangled skein, the treacherous sun was melting the snow that had lain undiminished for a week, and soon we hopelessly lost the trail in a wide valley, whence all the snow had evaporated.. Finally I had to be content with a couple of small bucks. The two days following I searched the whole country for my big buck, but in vain. At the end of the second day, some wood cutters told me that they had seen a large deer with fine antlers travelling northward fifty li away. It had a broken leg and two dogs were worrying it. Also a couple of hunters had gone after it. Then I gave up. My two hunters, who had faithfully stuck to me, were worn out, and the hope that had kept me going during those days of remorseless tracking and searching over such country, and in such weather left me, and I realized that I had never been so tired in my life.

Further more our time was up, so after a day spent in packing, we left the hunting grounds on our way back to civilization and the longed for comforts of home. But the thought of those antlers, lost, gone to swell another man's bag, is, and will continue to be the bitterest reminiscence of many failures in the hunting field.

CHAPTER V.

THE GORAL.

NORTH China, except for the great alluvial plains adjoining the seaboard, is essentially a mountainous country. From east to west, and north to south the mighty ranges run. Massive spurs and castellated peaks rise from the ridges, their ribbed and naked sides often falling sharply away for thousands of feet. Down through the strata descend deep chasms, hewn by the eternal passage of mist-fed waters, whose many voices rise from the shadowy depths, so far below that they come only as a gentle murmur. In many places these walls of rock, sheer and precipitous, are scarred across with light grass-covered ledges, upon which one would think an eagle could scarcely find foothold, far less a wingless quadruped.

Here and there caves, wide crevices or water-worn hollows neath over-hanging crags give shelter from the warring elements, while, at intervals amongst the precipices and rugged cliffs, occur more gentle slopes, covered with rich grass, dense brush and sometimes with stunted trees.

It is such places as these that the goral chooses for its home. Here, sure-footed as a cat, agile as a deer, it may hide where none can find, or flee where none dare follow; and so find safety from its many enemies.

He who would hunt the goral must be prepared to face the most difficult climbs, involving the hardest kind of work, and calling for a cool head, steady nerves and an active body. Often he will find himself hanging on by his nails, with nothing but space beneath him, and a seemingly unattainable shelf his only hope of safety. All this, however, but lends zest to the sport, which ranks very high amongst the different kinds to be had in this country.

The goral has been called the chamois of Asia, and it would be difficult to find a more appropriate name. In build, size and habits the goral, or good-antelope, as it is sometimes called, is very much like the

chamois. It has the same short goat-like feet, the same soft though fuzzy hair and mane, the same large ears and the same wonderful agility and climbing powers. The horns, though of the same type, are, however, straighter and do not have the sharp hook of those of the chamois. Again, whereas the chamois goes about in herds, the goral is more of a solitary animal. The chamois inhabits the mountain summits and open ridge tops, while the goral keeps more to the steep precipitous sides.

The goral, together with the chamois, the serow and the remarkable takin, form a connecting link between the true goats and the antelopes. They are all mountain inhabiting animals, and are mainly characterized by their smooth, cylindrical horns, usually annulated at the base, their goat-like forms and their absence of beards. Two species occur in the Himalayas. These are *Urotragus goral* and *U. bedfordi*. In Eastern Thibet occur two others *U. cinereus* and *U. griseus*. Heude has described several from different parts of China, but as the status of some of these is questioned, we will not bother with them. In this chapter we need be concerned with only two distinct species, one *U. galeanus* from South Shensi, and the other *U. caudatus* from North Chihli. The latter was originally described by Milne-Edwards as *Antilope caudata*.

It is just possible that *U. cinereus* one of the Thibetan forms may extend into Western Kansu, and so come under our heading of North China fauna.

U. galeanus is a dark grey-brown animal having a broad cream-coloured patch on the throat; legs cream-coloured from the knee and hock joints downward; a slight suggestion of a median dorsal line; and a long, curled, black tail. The insides of the ears are also cream-coloured. It stands about thirty inches at the shoulder and has horns of from four to six inches in length. These slope back sharply and are very pointed, with but a slight curve.

The length of the tail is due chiefly to the great length of the hairs, which protrude beyond the last vertebra for five or six inches, and have a strong upward curl. The long tail, arched shoulders and head held low, together with the stealthy cat-like movements, or the quick, erratic bounds from rock to rock give the goral a most peculiar appearance.

U. caudatus, so called on account of its unusually long tail, is much browner in colour than the foregoing species. It has a less conspicuous patch on the throat, a more pronounced median dorsal line, and has the same cream coloured legs. It inhabits the mountains of North

Plate VIII.



Photo by Captain T. Holcomb.

MONGOL HUNTER AND GORAL.
SHOT BY CAPTAIN T. HOLCOMB IN
NORTH SHANSI.

Chihli, being found as near to Peking as the peaks surrounding the Nankou Pass. It is also common in the mountains to the west of the Capital, and extends for a considerable distance southward. In Shansi it occurs only in the extreme north, where, in certain places, it is very plentiful indeed.

Here as elsewhere it is remorselessly hunted by the natives, so that it is rapidly becoming exterminated. The goral's skin is very pretty, the fur being soft and strong, so that it fetches a good price. Doubtless with the opening up of the country to increased trade with Europe and America, the goral is another fine sporting animal added to the list of those already doomed to extermination.

In hunting the goral it is particularly important to learn as much as possible of its habits. It is by far the most elusive of all the larger game animals in this country, and it is only by knowing just where it may be found, and what it is likely to do when put up that one can hope to secure it. Of course native hunters can help a great deal, and when out after goral the beginner would do well to pay strict attention to what his shikaree tells him to do.

The goral feeds early in the mornings and late in the evenings often before and after daylight. After the morning meal, it clambers down to the stream-bed to get a drink, and then hurries back to the cliffs. Here it chooses a sunny spot, often on some spur or ledge of rock in full view of the passer by, and lies down to rest. In summer it prefers the shade of the caves and overhanging rocks. It must not be imagined, however, that the goral can be easily seen, because of the exposed positions it chooses for its siesta. On the contrary, so perfectly does it resemble its surroundings, and so still does it lie, that it is absolutely invisible, even to the keen eyed natives. Sometimes, however, its nerves get the better of it, and it betrays its presence by a flicker of the ear, or even by a sudden precipitous rush for a safer vicinity.

When put up it is by far the hardest animal to hit. Its small size and quick erratic movements, combined with its constant appearance and disappearance as it dodges amongst the boulders and through the brush, and its remarkable protective colouring render it a most difficult mark. Also it is usually put up under the worst possible conditions for accurate shooting. It not infrequently happens that, just at the critical moment, the hunter finds himself perched perilously on the edge of some yawning chasm, when the loss of balance means certain destruction; or he may be struggling to recover his breath after the exhausting climb, when with a rush, the quarry breaks cover, and he finds himself unable to draw a bead upon it.

The best of shots are often beaten by this elusive little quadruped, and I know of more than one sportsman in this country with long lists of big game to their credits, to whom it would not be safe to mention the word goral.

Nevertheless, that the goral can be secured, and just how this may be done, the following narratives will show.

My first experience of the goral was gained in the Chin-ling mountains south of Si-an Fu, Shensi. Here I was camped in a little temple in a deep ravine, while I scoured the neighbouring peaks and ridges for specimens. One day I was shown a pair of goral's horns and was told that these animals were very plentiful on a certain peak not far away. Accordingly I set off next day, accompanied by my boy and, after a stiff climb, reached the summit of the peak in question. There we found a little temple, the inmates of which told me that we would find a goral in a certain small cut on the east side of the peak. With great difficulty, owing to the dense scrub, matted trees and steep slopes, we made our way to the cut, and sure enough as we reached it, out jumped a large goral. I was in a very awkward position for shooting, so that the animal escaped me and was soon out of sight.

We followed its trail, however, which led us round the shoulder of the peak, ending abruptly on the edge of a precipice, which fell away almost sheer for some hundreds of feet. I decided to climb down after my quarry, but had not gone far before the goral broke cover, and climbing rapidly upwards vanished over the top as my rifle rang out. Fortunately my boy was ready with the shotgun and brought the animal down with a well directed charge of buckshot. Though I could not claim the honours of the chase, I was more than pleased at securing this fine specimen for my collection.

It was some years before I got another opportunity of shooting a goral. This was in the mountainous country of North Shansi. Here, with three companions, I put in several days after goats, as we called them. We had all done very well with sheep, roedeer and wapiti, but we failed to secure a goat. On one occasion two of the party went out specially to get one of these animals. After a hard climb up some precipitous slopes, they were stationed by the native hunters on narrow ledges, from which giddy perches they could command two or three other ledges, and incidentally an uninterrupted view of the stream and boulder-strewn bed a thousand feet below them. The natives, with many parting injunctions to the sportsmen, not to move, then made a detour to the head of some adjacent cliffs and began heaving over rocks and shouting. Very soon two goats broke cover

and came scrambling along towards the watchers. One of the sportsmen opened fire, and immediately the goats sought cover and were lost to view. He then started to climb down to where he thought the quarry were hiding; but had not gone far when they broke cover again. Raising his rifle he commenced to fire, regardless of the fact that his foothold had given way and he was sliding down a grassy slope towards the brink of the precipice. Of course his shots went wide, the goats got away, and he was only just able to save himself by digging the butt of his Winchester into the clinging grass roots. The other sportsman had been unable to get a second view of the goats.

On another occasion a goat was put up and was actually headed off from the high cliffs, and kept dodging about the lower slopes for fully half an hour. The sixteen shots that were fired at this one all went wide, and presently, having worn its pursuers down to a state approaching prostration, the goat managed to get back to the high peaks and safety.

During my last trip with Captain Holcomb several goats were bagged, but it was only by driving, the method invariably employed by the Chinese hunters, that my companion got his.

This form of sport is really very enjoyable. Choosing, if possible a bright warm day, the party consisting of two or three guns and as many beaters make for a likely spot. A stiff climb is always necessary for the guns to get to their posts. They are assigned certain positions along the probable lines of flight of the quarry. Here they make themselves as comfortable as possible, while the beaters go round to drive out the goats. Presently the long shouts of the drivers commence. Anon these change, and the anxious listener can distinctly make out the words "yang kuo ke la," meaning "a sheep has gone over," and indicating that the game is afoot. If luck is with the sportsman he will soon see a goat passing within easy range, and a careful shot brings the drive to a successful close.

Though I spent a couple of days driving, my only goat was secured one morning on its way back to its haunts, after its daily drink from the stream in the valley bottom. I had started out earlier than usual that morning, and so got ahead of the grass cutters, who usually disturbed the game in the valleys on the way to their work. Within a mile of camp we suddenly came upon the goat, which offered the usual tantalizing mark, as it scurried up amongst the rocks. It had gained an altitude of some 200 ft. above the stream bed before I was able to get a good aim. My second shot hit it in the shoulders but did not disable it and it continued upwards with wonderful agility. At

last, however, a bullet found its heart, and with a few convulsive struggles it rolled off the shelf and came flying down through space. I expected to find my prize hopelessly mangled after such a fall, but strange to relate except for a slight injury to one horn, and the two bullet wounds it was undamaged.

I saw several more goats in the same way but succeeded in hitting only one. I lost this one, however, as it got away, its remains being picked up next day after the wolves had been at it.

My driving was a complete failure. Only one goat was put up, and though I managed to hit it at unusually long range it made good its escape in the labyrinth of rocks and boulders of a mighty amphitheatre of towering cliffs and jagged scarps.

My companion had better luck, however, securing three goats altogether. Two of these had good heads. He very nearly lost one of them, as it took refuge in a cave, in the floor of which was a deep shaft going into the bowels of the earth. The goat in its dying struggles fell into this shaft, but fortunately was caught on a small ledge, from which it was rescued by one of the natives.

CHAPTER VI.

ANTELOPE SHOOTING IN MONGOLIA.

WHEN the word antelope is mentioned one's thoughts immediately take wing to the great game preserves of East Africa, which country we have been taught to look upon as *par excellence* the sportman's paradise. And so it is. There one may see herd upon herd of antelope and buck, often containing three or four different kinds, feeding together on those immense grassy and shrub-dotted stretches.

Altogether there are well over eighty kinds of antelopes found in Africa, ranging in size from the eighteen foot giraffe down to the little blue duiker, which stands only thirteen inches at the shoulder, or in weight from the fifteen hundred pound eland to the seven pound dik-dik, and in appearance from the hideously fierce looking gnu to the graceful and elegant spring buck.

Nevertheless Africa is not the only place where there are antelopes. In Asia there are plenty of these pretty and graceful creatures, though there is not so great a variety. They extend from Asia Minor through Palestine, Arabia and Turkestan southward into India, and eastward and northward into Mongolia. Most of these belong to the genus *Gazella* and are inhabitants of the arid desert regions.

In Mongolia there are at least three different species of antelopes or gazelles, namely, Przewalski's gazelle (*Gazella przewalskii*), the Mongolian gazelle (*G. gutturosa*) and the goitred antelope (*G. subgutturosa*). Of these Przewalski's gazelle inhabits the western Gobi and is characterized by its strongly curved horns, very short tail and small size.

The goitred antelope, so called on account of its greatly enlarged larynx, is commonest in Outer Mongolia. It has a long tail, and much straighter horns than Przewalski's gazelle.

The Mongolian gazelle ranges from Western Gobi right across Mongolia and is also found all along the Chinese border. It occurs in vast herds often containing hundreds of head. It is larger than either of the other two species, and has longer horns. The tail is extremely short.

This antelope is a fine looking animal, especially in its winter coat. In summer it is of a rich orange-fawn colour, with white underparts and croup. The winter pelage is much lighter and is without the orange tint. The horns, which are only present in the males, rise at a slight backward angle from the head for four or five inches. They then slope more sharply backward and outward, finally turning in and slightly upward at the tips. They are nicely annulated for three-quarters of their length. The record measurements up to date are $16\frac{5}{8}$ inches in length and $4\frac{1}{3}$ inches in girth with a spread of $6\frac{1}{2}$ inches at the tips.

This is the animal that used to be sent annually to the Palace in Peking as tribute from the Mongol Princes. Doubtless the reader has seen them for sale in the markets here and in the Capital. Only good sized males could be sent down, and these had to have the front legs crossed over the back of the neck. The flesh is excellent especially during the winter after it has been kept in a frozen condition for some time.

The Mongols have several ways of hunting the antelope. They may chase them on horse back with hounds, or stalk them on foot; but neither of these methods could be used to supply the big demands from Peking. For this the chiefs have to organize big drives, which are conducted in the following manner. Two lines of pits or trenches are dug commencing far apart and gradually converging till they meet. In the last dozen or so pits, men, chosen for their marksmanship, are hidden. Then a large body of horsemen ride out and round up a herd, or several herds of antelope, and drive them into the wide end of the two lines of pits. The antelope will not attempt to jump over the pits, and so crowd together and are driven down the narrowing lane. When they reach the marksmen, the latter open fire and inflict terrible slaughter. The rest of the herd, driven by fear, finally escape across the lines.

I do not know how the Mongols conduct the chase with hounds, but should imagine that relays must be used, for the antelope is far speedier than any hound. One European of my acquaintance, who lived in Mongolia, told me of a Russian wolf hound that he had, which could follow a herd of antelope keeping just three or four leaps behind the hindmost, but could never catch up those last few yards. Of course this hound was extremely useful in catching wounded animals.

Stalking on foot requires considerable skill and knowledge of the habits of the antelope. Usually two or three hunters go out on horse

Plate IX.



THE MONGOLIAN GAZELLE (*Gazella gutturosa*).
THE AUTHOR AND HIS FIRST BUCK.



F. W. WARRINGTON AND HIS BEST ANTELOPE.

back. When a herd is sighted one jumps off and worms his way over the ground till he reaches a satisfactory position. Meanwhile the others have ridden round and attempt to drive the buck towards the man with the gun. This method can only be practised in hilly country, as the antelope are much too sharp-sighted to be deceived in this way on the flat open plain.

The European with his high-power long-range repeating rifle has a much better chance of shooting antelope than the Mongol with his primitive weapon, but even he will find it extremely hard to estimate ranges, for Mongolia, above all countries, is a land of great distances. Hills that appear ten minutes walk away will not be reached in an hour, and the range of a buck that one puts down as being not more than two hundred yards will turn out to be nearer six hundred. It is only when one gets into hilly country that one finds this wary game at all easy to secure, and even then one must either be a remarkably good shot, or else have had some experience of the quarry and Mongolian distances.

One thing is certain, he who attempts to go after antelope without being well mounted and having one or two equally well mounted attendants, will be foolish indeed. It is always best to get hold of a Mongol hunter, for they are certainly fine shikarees, and, if their advice is followed, will bring one right up to within easy range of the buck.

My own experience of the Mongolian antelope was gathered during three different collecting trips, one in the Ordos Desert, another in North Shansi and the third in Mongolia north of Kalgan. On the first trip I was unsuccessful in my attempt to shoot an antelope, though it was not the fault of the Mongol who accompanied me. He brought me up to within fifty yards of a herd of thirty or forty nice buck, but it was my own wretched marksmanship that prevented my securing a trophy. I shall never forget dodging from hillock to hillock, now creeping flat upon the sand, now running with body bent low behind the cover of some bushes, and finally climbing stealthily up the last ridge and lying at the top to regain my breath ere I fired. The buck were quite unconscious of our presence, till the nearest one suddenly looked up and spotted me. With a peculiar sneezing noise it made off. The rest of the herd sprang to attention, every head pointed in my direction. In my anxiety to get a standing shot I fired wildly and missed, while the antelope broke in every direction at the report of my rifle. We tried again and again, but never got another chance like that.

My second meeting with antelope was even more disappointing for though I succeeded in bowling over a nice buck at about three hundred yards range, it got up and made off before we could reach it. I had hit it in the flank, but though we trailed it for several hours it finally escaped us altogether in some broken country.

It was not till I got into Mongolia itself that I had any luck with these animals. An account of some of my experiences then will serve to show just what the sport is like.

Accompanied by Mr. F. W. Warrington, who was acting as my assistant, I left Kalgan and took the outer road towards Lama Miao. On our third day out, not more than fifty miles from our starting point, we ran into the first herd of antelopes, and at once went after them. They were feeding upon the side of a hill, so we made a detour till we got behind another hill opposite to that on which the buck were. Leaving our ponies with the attendant we crept up to the top of the ridge, but found that the buck were still too far off. Back to the ponies and round another hill we went. This time we reached a point, as we thought, within two hundred yards of our quarry. We each chose an antelope and fired. Our bullets fell short, and the next instant the whole herd was across the ridge and out of sight. On our way back to the road we came across three more buck, but though we tried hard did not succeed in getting another standing shot. That afternoon we saw another three with nice heads. These kept running parallel with our course for three or four miles but did not come within range. Next morning we passed several pairs without, however, getting a decent chance at them. The following day Warrington got his first antelope, while I had the misfortune to wound one which got away in spite of our utmost endeavour to run it down and secure it.

At one place we stayed for a couple of days simply to hunt antelopes, and succeeded in getting several head. It was always the same tale; either a lucky long shot on the plain or a surprise as one topped one of the numerous low ridges. It was splendid sport, but was a severe strain on the ponies, so that we could not keep it up too long, and if we did not succeed in getting a buck out of the first herd or two would have to give it up for the day.

When within two day's journey of Lama Miao we ran into an enormous herd that must have contained from five hundred to one thousand head. It was a sight never to be forgotten, to see the whole plain moving as it were. The antelopes were very shy, and we could not get within four hundred yards of them. We succeeded in bagging a couple, however, by which time it was getting late and

we had to hurry on after our carts, or run the risk of losing them for the night.

When we got to Tabool, a place about one hundred miles north of Kalgan we stopped for a fortnight, and got in some good days after the antelopes. We were very kindly supplied with fresh mounts, a thing we very seriously needed by now, and were also put up and royally entertained by a well known missionary and his devoted wife.

Altogether we got five antelopes while in this district. Our mode of procedure was to ride out to the herd of ponies and there change our mounts for fresh ones. Then we would set out for one or other of the groups of hills that lay along the horizon. Reaching these, generally by midforenoon, we would climb ridge after ridge till we spotted a herd of buck. It may be explained that the bucks with the best heads were always to be found in twos and threes amongst the hills. Having located our quarry, we would take careful note of the lie of the land and the direction in which the antelopes were moving. We would then get out of sight behind the ridge and attempt to work round to some point of vantage. It was no easy task to decide which was the particular knoll that one had noted so carefully before, and we would frequently be disappointed in not getting within easy range of the animals. Still, when we did succeed in stalking and bringing down a nice buck it made up for a lot.

My best head I secured after riding a couple of buck down, by taking full advantage of the rolling nature of the plain and urging my pony to its utmost speed each time they disappeared into a hollow, and slacking into a trot each time they reappeared. In this way I gradually decreased the distance between them and me, and, when they were within range, jumped off my pony and took a quick successful shot.

The beauty of this sport was that one never need give up hope of getting a shot, even when one had turned one's pony towards camp; for at any moment a buck might spring up from the long grass and stand a few seconds ere it broke away. Sometimes a herd would come sweeping by in full flight from some danger in its rear. At such times one might get several shots in before the antelopes realized that a new danger threatened them.

Our host, who had spent the best part of fifteen years in the district, had many interesting anecdotes to tell, and certainly, considering the number of antelopes we saw in the vicinity of his bungalow he would have plenty of opportunity of becoming an expert with the rifle. His best performance was getting three bucks out of a small

bunch of four, which he bagged with three successive shots, missing the fourth as it doubled round a spur. Indeed his fame as a hunter was great amongst the neighbouring Mongols, who were themselves anything but poor at the sport.

The most accessible place for antelopes for Tientsin sportsmen is anywhere north from Kalgan, when they will come across them within thirty miles of the outer loop of the Great Wall. Autumn and spring would be the times to hunt these animals, for the winter is just a bit too severe. Still it could be managed in winter, if the sportsman were to buy a couple of large camel carts, which he could use instead of tents, only riding on his pony during the day and when after the antelopes. He would also get some good sand-grouse and hare shooting, so that a few weeks might thus be very profitably spent.

For outfit it would be best to carry kerosene oil and a couple of primus stoves, plenty of flour, beans and potatoes, some good warm clothes and a fur sleeping bag.

The following tips may be found useful in shooting antelopes. As already stated the best bucks are to be found in the hills, where also, they may be more easily stalked than on the open plain. They have very keen eyesight, so that it is hopeless to approach them without cover. Their hearing and sense of smell does not seem to be so good as in many animals of their kind, but one should be as silent as possible, and should approach the quarry up wind as matters of principle. Except when they are very close always allow for their being at a greater range than estimated; though of course as one gets more used to conditions one will judge the range more accurately. As the antelopes are very inquisitive they may be enticed to approach nearer by lying in the grass and waving a white rag. They almost invariably run round one in a big circle, as though they felt that one were trying to cut them off from some safe refuge. Advantage may be taken of this to get a couple of hundred yards nearer to the antelope by riding across the circle thus executed. When it is known that an antelope has been wounded it should never be chased, but allowed to lie down and stiffen. It will not go far unless pursued.

CHAPTER VII.

FUR BEARING MAMMALS.

As most people are more or less interested in furs, it is not unnatural that they should wish to know something of the animals from which they are taken. One is often asked questions concerning the furs that people are wearing, and not infrequently, to avoid giving offence, one has either to dissemble in naming them, or profess ignorance on the subject. As a matter of fact in no line of goods is so much deception practised as in furs. There are, of course, plenty of reputable retailers, who can be trusted to supply the genuine article. As a rule the more expensive furs offered for sale are genuine enough, for a person who proposes laying out a large sum in this manner, is usually pretty careful what he buys. It is when one comes down to the cheaper furs that the most flagrant frauds are encountered, as for instance the threading of white hairs into the skin of an ordinary red fox dyed black to imitate that of the silver fox, or the passing off of furs made up from the skins of common animals as mink, marten and even sable.

I do not, however, propose to go into these deceptions, but rather intend to describe the real animals, and leave my fair readers to draw their own conclusions as to the genuineness of their furs and muffs.

It would be much too lengthy a task to describe all the fur producing animals of the world, so I am going to limit my subject to the fur bearing animals of North China and the adjoining territories.

These come under two headings; namely, those whose skins are used for rugs, and those whose pelts, as they are usually called by the trapper, are used for articles of apparel.

The first heading includes mostly large and well known animals, chief amongst which is the Siberian tiger (*Felis tigris longipilis*). This animal is probably the largest of its kind, some really enormous skins having been secured from Manchuria, its true home. It is a very

different animal from that found in South China. In colour it is lighter than the other known races, but it is chiefly characterized by its very thick, almost woolly coat, which makes its skin so valuable. I saw one skin marked up at Tls. 400.00 in Moukden. It has long been a question whether tigers really exist in North China. From evidence, which I have gathered on the subject, I am satisfied that they do occur in West and North Shansi, and at least, did occur up till quite recently in North Chihli and across the Mongolian border in the Wei-chang (Hunting grounds), west of Lama Miao.

In Manchuria and North Corea they are comparatively plentiful, though they are not easily secured on account of their keeping to the dense forest regions. The natives hunt them persistently, for a single tiger is worth a great deal of money. Not only is the skin of value, but the bones fetch a high price as medicine. The tigers are trapped in big log pens or else shot, the hunter frequently being armed with no better weapon than an old gas-pipe muzzle-loader. Very often serious accidents are the result of this dangerous pursuit.

Two other members of the genus *Felis*, whose skins make handsome rugs are the leopard (*Felis pardus villosa*) and the snow leopard or ounce (*Felis uncia*). Of these the first is found all over the hilly and mountainous districts of North China, being very plentiful in certain of the wilder regions. It has much longer fur than the leopards found in India, a good winter coat having hairs fully three inches in length. It is of a fine yellow-brown colour, strongly marked with black dots, which assume the form of large rosettes on the flanks and back. The fur of the throat, neck, chest, belly and on the inner surface of the legs is white. The tail in winter specimens is often white for the latter half of its length, and is marked with broad black rings. The North China species is a large animal, usually exceeding those seen in travelling menageries, which are almost invariably either from India or Africa. Many specimens taken in winter are so light coloured and have such thick fur that they might easily be mistaken for the snow leopard.

The ounce, however, has the black markings in the form of large rings instead of dots or rosettes. They are not nearly so pronounced as the markings of the leopard, while the fur of the back and sides is of a very pale fawn-yellow. The skin is also very much more valuable. The two animals are about the same size. The ounce is found in Thibet, the higher parts of the extreme western border of China, throughout the Altai Mountains, across Southern Siberia and in North Manchuria.

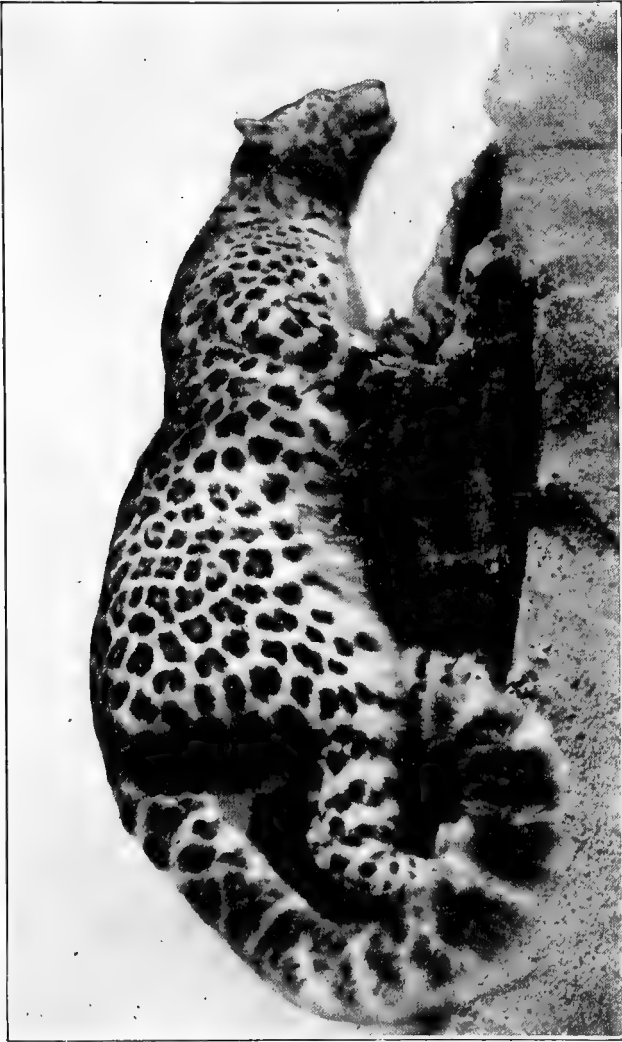


THE MANCHURIAN TIGER. (*Panthera tigris ussurialis*)

The next rug producing animal is the wolf, which is represented in China by the subspecies *Canis lupus tschiliensis*. This is a large gaunt creature, which does not pack like the Russian wolf, preferring to range the country alone, or in company with its mate. In size it about equals a mastiff or deer-hound. Though a powerful and cunning animal, it is inclined to be cowardly, and secures its food, especially in thickly populated areas, by snatching off sheep, small pigs, dogs and even children straying on the outskirts of the villages. When pressed by hunger, it will attack a grown man, even if the latter be armed. In some districts wolves are a great pest, and there are very few places entirely free from them. The skin of the North China wolf is not very good, being worth not more than \$5.00 or \$6.00. The skins from Mongolia, which have much thicker fur, and are considerably lighter in colour, are worth at least double that sum. All kinds of practices are resorted to in the hunting of wolves. Poison, guns and trap-guns are all used, while many hunters, who know the habits of their quarry, lie in ambush and shoot them along their chosen paths.

Perhaps of all rugs none look so well as those made from the skin of a bear, with the head nicely mounted and claws outspread complete. Unfortunately North China cannot lay claim to being a bear country, though there are three or four species recorded from adjacent districts, some of which may wander into or even take up their residence in Chinese territory. On the Thibetan frontier there are at least three species to be met with. One of these is the common brown bear (*Ursus arctos*), which ranges from Spain to Kamschatka. Bears of this species attain a great size, even rivalling the grizzly or the polar bear. Another common species in this region is the Himalayan black bear (*Ursus torquatus*), a much smaller animal. As the name suggests this species is black but it has a conspicuous white crescent on its chest. The third species is the parti-coloured bear (*Ailuropus melanoleucus*) sometimes known as the great panda. This queer looking animal, though a bear in appearance, differs from the members of the genus *Ursus* in many ways. Its skull is remarkable for a very high ridge running longitudinally along the upper surface of the cranium. There are also marked dental differences, and the width of the skull is proportionately much greater than in the true bears. The colouring of the panda is also very remarkable. The body and head are white, the legs and belly black, while a black band extends from the front legs over the shoulders. The ears are black and there is a large black patch round each eye. These animals are very rare in collections, and are not at all easy to secure. Practically nothing is known of their habits.

Plate XI.



THE LEOPARD (*Felis pardus villosa*).

The colour of the sable varies from blackish-brown to chocolate and even grey-brown. The under fur is usually grey. There is an orange-yellow patch on the throat. The sable is found in Siberia and Manchuria. The so-called Sze-chuan sable is really the pine-marten (*M. martes*), which is also found in Manchuria. The maximum value of a single sable skin is £25, while that of a marten seldom reaches £5.

The next species of importance is the stoat or ermine (*Mustela erminea*), which certainly used to inhabit North China, and probably may still be found in some districts. These animals are so shy, and so purely nocturnal in their habits that they may easily be in a district without its being known to the inhabitants. The ermine is really little more than a large weasel, and it is only valuable when in its winter coat. The summer pelt is of a rich chocolate-brown with sulphur-yellow underparts. The hair is not long, but is beautifully soft.

I have recently secured a fine specimen of a stone or beech marten (*Martes foina*), which has a very beautiful fur, almost rivalling that of the sable. It is an inhabitant of the mountainous regions of North Shansi, and is comparatively rare. The fur is of a fine grey-brown colour on the outside, the under fur being almost white. The tail is long and very bushy. There is a white patch on the throat, and white tips to the ears. The Chinese name is Sao-shueh.

The Chinese minks are not early so valuable as their European and North American cousins (*Mustela lutreola* and *M. vison*). Of these two the latter is the more valuable. Minks are found in Tientsin, the local species being known as *M. davidiana*. The Shansi and Shensi forms are referable to *M. sibirica*. In Shansi a very much smaller species also exists, which is closely related to *M. astuta*. The latter occurs in Western Kansu and in Thibet. Minks are always more plentiful round marshes. Their skins are exported in great numbers under the name of weasel. The colour is a fine orange-buff inclined to chestnut. It is much lighter than that of the American mink.

In connection with this subject it would be as well to mention a few other members of the weasel family found in North China, though their fur is of little value. Commonest of these is the yellow throated marten (*Martes flavigula borealis*). This is much the largest of the Chinese weasels, exceeding a full grown cat in size. It has a very long tail. In colour it is of a grey-brown above with black head, tail, legs and belly. It has a large bright yellow patch on the throat, which in some specimens continues in a yellow-grey band right round the neck. The fur is coarse and not very long. Of a fierce and blood-thirsty disposition, this

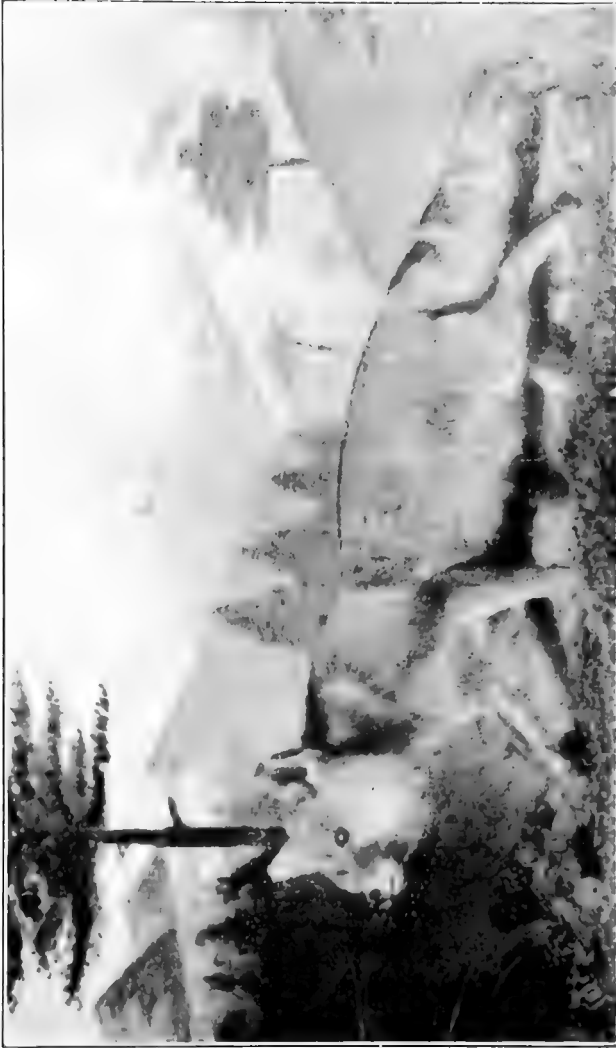
marten commits serious depredations in the poultry yards of the districts it frequents. It is common in all mountainous and loess regions, especially in North Shensi.

The next species is the polecat which is found from Shansi westward. The colour of this animal varies considerably according to the season. In summer it is of a rich brown, the hairs being much lighter at the base than the tip. In winter the fur changes till it is almost white, and only the tips of the longest hairs retain their dark brown or black. The face has a broad black band across the eyes, the nose and upper part of the head being white. The ears are black with white tips. These animals, being easily tamed, are used for ratting by the Chinese. Two species occur in North China, namely, *Mustela larvata* from Kansu and *M. tiarata* from West and North Shansi. The Chinese name is Sao hu-tze, (Ermine fox).

Another most interesting animal, related to polecat is the vormela (*Vormela negans*), which was discovered by me on the borders of the Ordos Desert. The species is remarkable for its colouring. The head is banded with black and white; the nape is pale-yellow with brown markings. The yellow colour extends along the back, getting richer till it merges into orange on the flanks and rump. The whole is spotted with brown. The throat, belly and legs are of a shiny black. The tail is long and of a yellow colour, being black at the tip. The ears are tufted and are white in colour. This peculiar animal inhabits the sandy Ordos Desert, its range probably extending westward into Central Asia, where it is replaced by the only other known species *Vormela peregusna*.

One other member of this family should be mentioned, namely the weasel itself (*Mustela sp. incon.*). I have known of its existence in North China for years, but have hitherto been unable to secure a specimen. Last summer I got one specimen in Manchuria, and I have seen others from Sze-chuan. The Manchurian specimen is of a rich chocolate colour above and pure white beneath; those from Sze-chuan are chocolate above and pinkish-buff below. These creatures are much the smallest of the Chinese mustelines, being only seven or eight inches in length, and very slender in shape. They frequent woody areas, and are apparently very rare.

The wolverine (*Gulo luscus*) is another member of the weasel family, whose pelt has a good market value. This animal is not at all like any of the weasels in appearance. It is about the size of a bulldog, is very heavily and powerful built, and is extremely savage and



THE FOX. (*Vulpes vulpes*).

voracious. The fur is long, thick and soft, and of a pretty brown colour. The glutton, as it is more often called, is not found in China, but occurs in Manchuria and Northern Mongolia.

Lastly there is the otter (*Lutra sp. incon.*), which is found in Kansu, South Shensi and Manchuria. The fur of this animal is very valuable, and compares favourably with those from other countries. The otter is too well known to need description.

The cat tribe is not well represented in North China, though the few species that do occur all yield good furs. The best of these is the isabelline lynx (*Felis isabellina*), which is found on the Thibetan frontier. The fur of this animal is of a fine fawn-grey or grey-brown colour, and is thick and soft. A good lynx skin fetches Tls. 9.00 in Lan-chow Fu, but it is worth much more in the European market. The lynx is a savage cat-like animal, characterized by having tufts of hair at the tips of the ears, and long hair depending from either cheek like side-whiskers. It has a short tail, from which fact it gets its American name of bob-cat. It has enormous soft paws, and rather long hind legs, which makes it stand high in the stern. The lynx is also found in Northern Mongolia and on the Siberian border.

The spotted cat (*Felis chinensis*) is another animal which yields a good pelt. The fur of this cat is soft and silky and of a fawn-grey colour. It is covered all over with dark brown spots, giving it the appearance of a miniature leopard's skin. The tail is thick and annulated with black.

A cat, closely related to this species is the manul (*Felis manul*) from Mongolia. It differs in having hardly any spots. It occurs in North Chihli and North Shansi.

The common wild cat (*Felis cattus*) is also found in China. Its pelt is exactly like that of a good grey tabby, which animal it most resembles. It is slightly larger, however, and has a considerably shorter tail.

The next species is so important that a complete paper might be devoted to it. I refer to the common fox (*Vulpes vulpes*), which ranges from the west of Europe to the East of Asia. Probably more fox skins are sent out of Tientsin than of any other wild animal. The Chinese also value them highly, for, as every one knows, they make excellent fur coats. There is no part of North China where foxes are not found. A fox with a much darker fur is found in Manchuria, while a small species (*Canis corsac*) with soft yellow-grey fur comes from Outer Mongolia and Chinese Turkestan. Still further north occurs

the Arctic fox (*Canis lagopus*), from which the valuable white skins are obtained.

As far as I know there is no export trade in mole skins from North China. This is doubtless due to the great scarcity of moles. Three species belonging to the genus *Scaptochirus* are recorded from North China, but these animals are nowhere common.

Judging from the great number of rodents found in the country, one might reasonably expect to find that at least some of them yielded valuable furs. As a matter of fact the marmot (*Marmota robusta*) and the grey squirrel (*Sciurus vulgaris*) are the only two rodents in North China, which have valuable pelts, and these only occur in the extreme west, along the frontier of Thibet and Chinese Turkestan, and in Manchuria and Eastern Mongolia. There are a great many varieties of the grey or fur squirrel. They range in colour from red to dark grey. In many districts they are red in summer and grey in winter. The common squirrel of Great Britain belongs to this species.

The marmot is a very large member of its genus. The Chinese name is Ta la, or Han ta (Lit. Land otter), and in East Mongolia Tarabagan. I am told that far fewer marmot skins reach Tientsin now than formerly. It was this animal that was credited with spreading the pneumonic plague, through the agency of its fleas, as is the case with the common rat in Bombay and elsewhere. This may account for the falling off in the numbers of skins on the market.

CHAPTER VIII.

INSECTIVOROUS MAMMALS.

UNDER the heading of Insectivorous Mammals we have to consider a few animals belonging to the two orders *Chiroptera* and *Insectivora*. The first of these includes the bats; the second such small insect-eating animals as the shrews, moles and hedgehogs.

There are a great many different kinds of bats, ranging from the large fruit bats or flying foxes of tropical climes to the little pipistrelles and miniopteras of more temperate regions. Some are very beautiful creatures, while others, such as the naked bat and the hammer-headed bat, even the most ardent adorers of nature's creations could only describe as loathsomely hideous. Indeed, to many people, especially to the members of the fair sex, there is something indescribably obnoxious and terrifying in the most harmless species of this great group of highly developed and specialized mammals. This is doubtless due to the fact that certain South American species of bats subsist upon the blood of other mammals, being literally blood-suckers. These have been called vampires, a name which at once calls up stories of horrible blood-sucking phantoms belonging to the superstitious myths of our forefathers of the German Forests. Then, too, the facts that evil spirits in European legendry are nearly always depicted as having bat's wings, and also that the habits of the bat are nocturnal, have tended to class it along with owls, black cats, toads and ravens as a creature of darkness. In our childhood's fancies it belongs to the world of sprites and hobgoblins, and it would seem that many of us never entirely outgrow our dislike for these harmless little animals.

It is strange, too, that the Chinese look upon the bat as a thing of evil. They say it has an evil spirit, and never lose an opportunity of subjecting it to cruel torture.

As a matter of fact there are few animals that are prettier to watch or that make more interesting pets than bats. There is so much that is wonderful about them. They seem to have a sixth sense that warns them when they are in the vicinity of any object, for in a room full of ornaments

and bric-a-brac, even in daylight when they are practically blind, they can flitter about without so much as brushing a single article with their outspread wings. And what a wonderful membrane it is that stretches over those long bony fingers! Then there is a lot of profitable study awaiting the investigator into the problems of migration, hibernation, the varying altitudes at which different species feed, and the hours of the night, during which they are abroad.

Who amongst true nature lovers has not sat in the cool of a summer evening, and watched with untold delight the marvellous evolutions, circlings, turns, dives and soarings of bats in the gathering gloom? Who has not wondered at that high pitched squeak? It is a fact that the voices of some bats are so high that no human ear is attuned to a sufficiently high pitch to catch the sound, just as amongst some frogs the croak is so far down the scale, that when they are placed in a bottle one may feel the vibrations without hearing any noise.

Then, too, how interesting to see the mother carrying her baby about with her, the little helpless thing knowing only enough to cling to the soft fur of her breast.

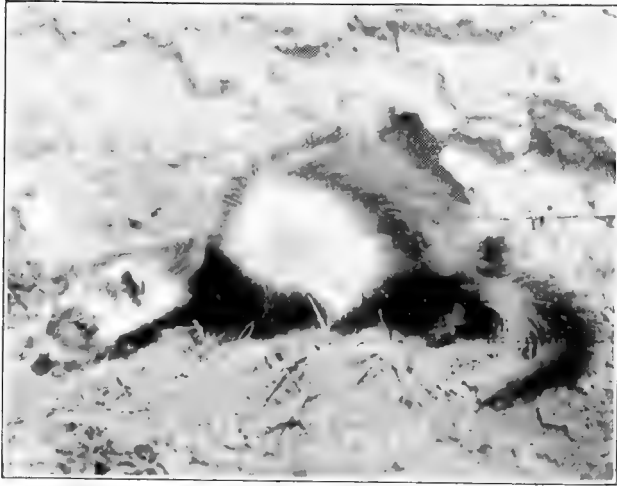
Altogether there are some five or six species of bats described from North China, though a great many more are to be found in the central and southern provinces of this country.

Over the greater part of the north only three species are at all common. These are the serotine (*Eptesicus serotinus pallens*) and two other small species known as *Miniopterus schreibersi chinensis* and *Myotis (Leuconae) pequinius*.

Of these the serotine is by far the commonest. It is the largest bat found in North China. It may be seen everywhere during the warmer months, but is most plentiful in the higher country westward from the border of Chihli. It is of a brown colour, having none of the peculiar membranous nose-leaves and facial decorations characteristic of so many bats. The sub-species was described as new from specimens taken by me while on the Clark Expedition in Kansu. It differs from the European form in being of a distinctly lighter colour, with a longer forearm and a shorter, broader skull. It hides during the day in loess cliffs, coming out in the evenings to feed, flying at comparatively great altitudes.

Miniopterus schreibersi chinensis was first described from specimens taken in some caves in the mountains west of Peking, where it

Plate XIII.



THE KANSU POLECAT. (*Mustela larvata*).



Photo by Captain T. Holcomb.

NORTH SHANSI HARES. (*Lepus swinhoei sowerbyae*).

was found in great numbers. This bat is somewhat smaller than the foregoing species, but in other external characteristics is very similar. It is darker in colour, however. Being exceedingly plentiful in Tientsin, it may be seen any evening from early spring till late in the autumn. It is the commonest species in these parts.

Myotis (Leuconae) pequinius was described from exactly the same locality as the foregoing species, having been taken in fact, at the same time. This is a bat of a grey colour, also without any facial frillings. It occurs all over North China, especially in the more mountainous regions.

When in Kansu I secured specimens of a very small bat, which was identified as belonging to the genus *Pipistrellus*, though its species was not determined. It was of a dark colour and had no facial membranous growths.

Besides these more or less common forms, we have in Chihli a horse-shoe bat (*Rhinolophus ferrum-equinum nippon*). Its name is derived from the peculiar membranous nose-leaf, which is roughly the shape of a horse's shoe. In England the horse-shoe bat is comparatively common, but its eastern representative seems to be rather rare, at least in North China. The same species occurs in Japan, where it seems to be more plentiful. In size it about equals the serotine, but is somewhat lighter in colour.

The long-eared bat (*Plecotus sp.*) is also to be found, though it seems to be rather rare. I have only seen one, and that was in Shansi. Whether the species found in North China is identical with *Plecotus ariel*, recently described from Szechuan I cannot say.

One other bat, of which I have seen but one specimen, and the name of which I do not know, is worthy of notice. This is a large bat with a peculiar orange-yellow coat. It occurs in Shansi, but seems to be very rare. Except for the remarkable colouring it is not unlike the serotine.

It is more than likely that there are other species, hitherto unknown to science, occurring in North China. The order is one of the least known in this country, owing, doubtless, to the difficulty experienced by collectors in securing even such specimens as they see.

The order *Insectivora* is very poorly represented in North China. This is doubtless due to the general dryness of the climate, for in the neighbouring regions of Central and West China, Manchuria and Japan, where there is an abundance of rain, and where, in consequence, such lower forms of life as worms, snails and insect larvae are very plentiful, there is a great variety of shrews, moles and other related types.

Such forms, as are found in the districts which come under our heading, have evidently become adapted to a dry climate and surroundings, some being found even in such places as the Ordos Desert.

One of the animals, best known to every English school boy is the hedgehog. Probably most of us have kept one or more of these interesting creatures in captivity at some time or other. In North China there are some four species described, being found in very widely separated areas. In Tientsin and on the Chihli plain generally occurs a hedgehog, which in general appearance closely resembles that of Europe. The two are about equal in size. The Chihli species was first described under the name of *Erinaceus dealbatus* by Swinhoe from a specimen from Peking. Amongst other characteristics it has a certain proportion of wholly white spines. The same species occurs in Northern Shantung, though by one observer the animal from this district was described as distinct.

Hitherto no hedgehog has been described from Shansi, but across the Yellow River in Shensi and the Ordos two species occur. Of these the Ordos form, *E. miodon* was described from specimens secured by M. P. Anderson and myself in 1908. The chief distinguishing features of this species are some dental differences, and the fact that there are no wholly white spines present. This hedgehog is fairly common in the sandy areas, where it feeds upon black-beetles, as shown by the examination of the stomachs of several specimens.

From the Ordos Border to the Wei Valley the hedgehog is again wanting, but in the latter district it reappears under the name of *E. hughi*. This species is very much darker in colour than the Ordos form, a characteristic that one might expect, considering the different surroundings.

E. hanensis is another species described by Matschie from somewhere in this direction. It has a fair sprinkling of wholly white spines.

When in Manchuria I secured a hedgehog, doubtless *E. orientalis*, in the forests on the banks of the Sungaree River. This specimen had a good proportion of wholly white spines.

It might be imagined that so prickly a customer as the hedgehog could have but few enemies, but judging from the number of remains I have found, it would seem that it has a good many. It is well known that a fox will tackle and kill a hedgehog. In so doing he pushes his nose under the hedgehog and tosses it into the air. This makes the hedgehog uncurl, and, before it can curl up again, the fox has nipped it in the unprotected vitals. In Europe the gypsies are notoriously fond of hedgehog flesh. I found this to be the case with the woodsmen in Manchuria. In both cases the animal is prepared for food by encasing

it in a coating of mud and baking it in the embers of a wood fire. When done the spines, hair and skin adhere to the clay, leaving a very toothsome morsel of beautifully cooked meat.

In Chihli hedgehogs are looked upon as sacred animals by the Chinese, and so are not molested. On the contrary, little shrines are often built for them.

In the matter of shrews these provinces are excessively poorly represented, at least very few specimens have been recorded. In Chihli two species have been found. These are *Crocidura coreæ* and *Chodsigoa hypsibia*. Members of the genus *Crocidura* may easily be recognized from the fact that the tails, besides having the usual covering of very short hairs, also have a sprinkling of long stiff ones. The other genera of shrews have only the short hairs. The *Crociduræ* are further distinguishable by the presence of glands, one on each side of the body, which are more or less odoriferous and probably give these animals their name of musk shrews.



THE MUSKSHREW (*Crocidura coreae*).

Crocidura coreae as yet has not been definitely located in any other part of North China than Chihli, in which province a specimen was taken at the Eastern Tombs. It was originally described from Corea. Three young shrews secured by me in Shansi have been referred to this species, but their age render the diagnosis uncertain. My specimens were of a distinct slate-grey, while *C. coreae* was described as greyish-brown. Age would of course account for this difference.

Chodsigoa hypsibia was originally described as *Soriculus hypsibia* from North-western Szechuan. Whether a shrew, the remains of which I found on a rock in West Shansi is referable to this species or not I could not say. They were too far decomposed to preserve.

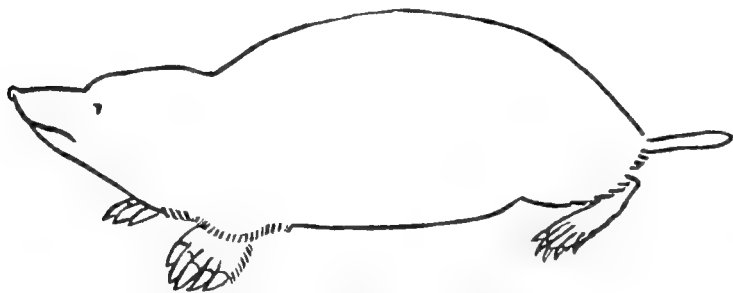
In the extreme south-western portion of Kansu, bordering the richly faunistic area of Western Szechuan, Milne-Edwards' little shrew *Crocidura attenuata* occurs, having been but recently recorded. Here also a new species belonging to the genus *Sorex* has been discovered recently. This is *Sorex wardi*, which was named in honour of its

discoverer. It is closely related to *S. cylindricauda* from Szechuan, which is remarkable in having a black stripe down the back. *S. wardi* has this stripe, but it is not so distinct.

S. sinalis and *S. cansulus* are other recent discoveries in these parts, as also are *Chodsigoa lamula* and *Blarinella grisella*.

Milne-Edwards described a watershrew from Eastern Thibet, not far from this same district, but so far nothing of the kind has been found in North China.

In Manchuria last summer I secured specimens of a large black musk-shrew, belonging to the genus *Crocidura*. The scent glands on the side of the body were very pronounced, while the odour from the shrew, which, as far as I could make out, emanated from these glands, was very strong. I could detect it some yards away. There is some question as to whether this strong odour is protective, and in this connection I can only quote from the natives. They told me in the district where I trapped the specimens that cats would not touch these shrews, while one man volunteered the information that in a certain valley not far from this vicinity, the settlers could not keep any cats, because they would kill and eat these shrews and get poisoned. The two statements somewhat conflict but I am inclined to place credence in the former, as a cat belonging to a neighbouring farmer continually brought in voles and mice, but never once brought in a shrew, though she hunted in exactly the spots where I trapped my specimens. The mortality amongst the cats of the neighbouring valley was probably due to some other cause.



THE MOLE (*Scaptochirus gillicsi*).

As far as I can gather only four species of moles have been described from the whole of North China. Three of these belong to the genus *Scaptochirus*. The largest is *S. lepturus* first described from Peking. This mole is peculiar chiefly on account of the tail, which is club-shaped and almost bare. In external appearance it resembles the common British species, except that the fur is greyer.

The second species occurs in Mongolia and is called *S. moschatus*, while the third *S. gilliesi* was recently described as new from a specimen from South Shansi. Previous to this I had secured a specimen in Tai-yuan Fu, and another on the Ordos Border. Subsequently I secured several specimens from Western Shansi. It seems to have adapted itself to an existence under more or less desert conditions, in which there certainly cannot be any abundance of worms. It must therefore live upon beetle larvae or some such food. The fourth species belongs to a new genus, discovered on the Fenwick-Owen expedition in South-Western Kansu. This is *Scapanulus oweni*, a rather small mole, resembling none of the other species found in China. In Manchuria, Corea, Japan and Central and Western China moles of many genera and species are very plentiful.

CHAPTER IX.

THE HARE.

IN flat country like that around Tientsin and Peking many sportsmen consider it almost a sin to shoot hares, for they offer so much better sport when pursued on horse-back with greyhounds. Still there is something to be said for the shooting of hares by the man who cannot afford to keep ponies and hounds. From a purely humanitarian point of view shooting hares might be preferred to chasing them. However, I do not wish to turn this paper into a discussion upon the rival merits of the two sports, so shall do no more than describe both.

First, however, it would be well to describe the species and subspecies of the genus *Lepus*. The hare found round Shanghai is known as *Lepus sinensis*. Recently a new species has been described from Northern Kiangsi under the name of *Lepus aurigineus*. Which of these two species inhabits Anhui and South Shantung has not been determined, but the hare from these parts certainly differs from that found in North Shantung, and Chihli, which is known as *Lepus swinhoei*.

In North Szechuan and in Kansu another species is found, namely *Lepus sechuenensis*; while the hare of Shensi and the Ordos is a subspecies of the Shantung hare, called *Lepus swinhoei subluteus*. In Shansi the genus is represented by another subspecies which was called *Lepus swinhoei sowerbyæ* in honour of my wife, who accompanied me on the journey during which this new variety was discovered. The hare of South Mongolia is known as *Lepus tolai*, which is replaced in the Altai Mountains by yet another species called *Lepus quercus*.

The European hare is known as *Lepus europæus*, and is identical with the common English form. The Scotch, or mountain hare, which turns white in winter is classed as a distinct species under the name of *Lepus variabilis*. The hares in Ireland belong to either one or the other of these last two species.

This is a jaw breaking list for the ordinary reader to wade through and my advice to him is, forget it! The uninitiated would find it



Photo by Captain F. H. Hume.

EQUIPPED FOR HUNTING HARES ON HORSEBACK.

hard indeed to distinguish between any of these species, the variations being only such as a Zoologist would appreciate. From a sporting point of view they are all alike. They all run in the same way, dodge about in the underbrush, or sit tight, letting the sportsman step right over them without moving.

Hare shooting under ordinary conditions is liable to prove somewhat tame sport. Compared with almost any bird on the wing a hare running in the open offers an easy mark. It seldom breaks cover out of easy range, and is also very easily killed or disabled. It is only where there is plenty of thick cover, or in very rough or mountainous country that the sport really begins to get interesting. Then it is that the hare shows to advantage its wonderful dodging powers, so that frequently even good shots are beaten. With its sharp, sudden turns, short, quick leaps over, and dives under the scrub it presents a very baffling mark.

Like the partridge the hare, in China at least, is usually taken as chance offers, in the chase of other game. It invariably abounds in good pheasant country and forms a pleasant diversion by getting up in all sorts of unexpected places.

An interesting method of hunting the hare in flat country is to shoot it from horseback. This gives it a better chance, and also allows of a good cross country run, for the hare, if missed once, can be followed and put up again and again. We used frequently to practice this sport on the Tai-yuan Fu plain, as no one was fortunate enough to own any hounds.

One hare, which we named Lucky Alphonso because he always escaped us, once gave me a splendid run. A party of us put him up in the usual grass patch that he occupied. We missed him as usual and then set out after him, as he raced away over the ploughed fields. A flock of geese attracted the attentions of my companions, who gave up the chase, but Alphonso had eluded me so often that I was determined to get him. He entered a kaoliang patch, from which I drove him. In another half mile he sought the refuge of some low sage brush, but again I got him going. Once more he found cover, and was driven out. This time he headed straight for the river and dived in. Next moment I saw his head above the eddies as he bravely swam for the opposite shore. I rode up to the bank and stood watching him. Suddenly, when nearly across, he changed his mind, and, turning back, came straight towards me. He reached the bank, dragged himself out, shook the water from his coat, and lopped off. I had not the heart to shoot him then, and as far as I

know Lucky Alphonso still inhabits the grass patch on the left bank of the Fen Ho.

As already intimated, coursing after hare with greyhounds is, to many minds, the most sporting method of hunting them. In company with a party of fellow devotees one goes out to the appointed place in a wagonette or by train, as the case may be. Here the ponies are waiting, and mounting these, the sportsmen spread out in a line and ride forward. All except two of the hounds are kept in leash behind the riders. Suddenly a hare jumps up and the two free hounds give chase. A wild scurry ensues, the riders taking ditches and mounds as they present themselves, while the hounds and hare stretch out in a race for life. The latter usually heads for graves, where perchance it may go to earth in some badger hole, or elude its pursuers by doubling amongst the hommocks. It is the business of the hounds to catch the hare before it reaches the desired haven. Therein lies the chief excitement, though the cross country run is liable to prove harrowing enough, for your China pony does not always take the jump when he is expected to, and loves nothing better than to dump his rider into a ditch. To the man with a sense of humour, the antics of the hounds, when a hare suddenly disappears, will prove very diverting. The Chihli hare is a fine runner and often escapes its pursuers, so that general satisfaction follows a pretty kill on the part of the hounds.

Last, but not least, the sumptuous luncheon provided for the occasion is a very attractive part of the days outing. Some say that the numerous cocktails indulged in have most to do with the success of the proceedings, and form the real attraction of the sport. Perhaps they do to some, but on the whole, a day behind the greyhounds is well spent, and is as healthy and enjoyable a form of recreation as there is.

Unfortunately this form of sport is not what it used to be—to judge from the accounts of exciting runs and wonderful kills, told by the old stagers. It is a fact, however, that hares are not nearly so numerous as they were, and those that remain are both fast and cunning, so that the percentage of kills is very much lower than it was. The difficulty in securing fresh hounds, and also of keeping in health those already brought out from home, further tends to prevent the sport from becoming very universal.

There is one other method of hunting the hare, and that is with hawks. This is undoubtedly the most sporting of all, though it is seldom, if ever, practised by Europeans. It used to be very popular with the Manchus, and is still kept up by Chinese hunters, who find

it an economical way of securing game for the market. Its chief drawback is the time and trouble which must be expended in training the hawks. These must be thoroughly tamed and require attention night and day. The training takes place at night in a quiet place, where there are no noises and sights to disturb the birds.

The gerfalcon is the best bird for the pursuit of the hare, though the goshawk and peregrine falcon may also be used.

When the bird, or birds, are thoroughly trained, a party of half a dozen beaters, including the owners of the hawks, sally forth into the fields and drive through the scrub and brush. As soon as a hare breaks cover one of the hawks is released and thrown into the air. It has already caught sight of the quarry and with rapid wing-beats soon overtakes it. Swooping down it deals a blow with its talons (not, as popularly supposed, with its beak). If this proves insufficient to stun the hare, it repeats the manoeuvre, or else grasps it and pins it to the earth. A good hawk, however, usually kills its quarry at the first stroke. Then the beaters hurry up in order to prevent the hare's being torn up, for the hawk has been kept in a state of hunger previous to being used.

Some hunters use their hawks to chase pheasants and partridges as well. In these cases the peregrine is the best bird to use.

Hares are prevalent everywhere in North China, though, of course, they are more plentiful in some places than others. South Mongolia simply swarms with them, chiefly round the encampments. Some travellers have put this down to the fact that the camp dogs keep away wolves and foxes. In my travels in that country I have noticed that the camps are always pitched, if possible, near streams or lakes of sweet water. It so happens that these spots afford the only really good cover in the form of tall thickly growing sedgegrass. It is my opinion that the hares seek the shelter of this cover rather than the protection of the camp dogs. Hares are not found round camps pitched in the open, where there is none of this cover; while where there is cover of this nature hares are always present in large numbers—camp or no camp. Of course additional protection is added by the presence of the camp dogs, which are usually much too slow to catch the hares themselves.

In the Ordos Desert we also found hares extremely plentiful, and also in North Shansi and Eastern Kansu. They are very numerous on the plains of Northern and Western Shansi.

The hare does not live in burrows, though in China it may seek shelter from pursuit in the burrows of badgers and holes in graves.

It has what is known as a "form," a little sheltered hollow in which it lies up. A hare uses the same "form" for a considerable time, and when put up will invariably return to it, after making a long circuit.

Some will lie very close in these "forms." Once, when out shooting with my wife on the Tai-yuan plain, I came upon a hare lying in its "form" in an open field of stubble. Standing right over it I called my wife and the coolie carrying our cartridges to come and have a look. The hare remained perfectly still till we had had a good look at it, and then only ran when I touched it with my foot.

Another incident of a similar nature occurred near the same place a few days later. Four of us were working through some scrub, looking for quail, partridges and hare. Suddenly one of the coolies called us back, and pointed to a large hare lying at his feet. This one also required a touch of the foot before it broke away.

From two to five young are born in a litter, the pretty little creatures being perfect in shape and able to run about at once. Several litters are produced in a year, and as they may appear very early in the season and also very late, not infrequently cause searchings of heart on the part of the sportsman, who inadvertantly shoots a doe with young. The only way to avoid this is to note carefully before pulling whether the hare is moving smartly with quick turns and long jumps, or listlessly with a comparatively slow lopping gait.

In winter hares love warm sunny banks, and will lie out on sparsely covered hill-sides facing south, but in summer they seek the cool and shelter of the densest thorn scrub; while in cultivated country they may nearly always be found in the family grave patches that are scattered amongst the ploughed fields.

They range from sea level up to eight or ten thousand feet, can withstand extremes of temperature, and find food in the scantiest harbage of the desert, as easily as in the luxurious vegetation of sub-tropical forests. They, like all rodents, form what scientists call a successful race, and will long exist to give sport to the hunter and joy to the *gourmand*.

CHAPTER X.

RATS AND MICE.

EVERY one is familiar with the common rat and the equally common house-mouse, but few realize that these pests have a host of cousins, some of which are extremely grotesque, others remarkably graceful, but one and all well worth studying.

Rodentia is the largest mammalian order. It contains the greatest number of species and individuals. All the members of the order are characterized by the possession of chisel-like incisor teeth, two in the upper and two in the lower jaw. There are neither canine teeth nor premolars, a gap occurring between the two incisors and the molars.

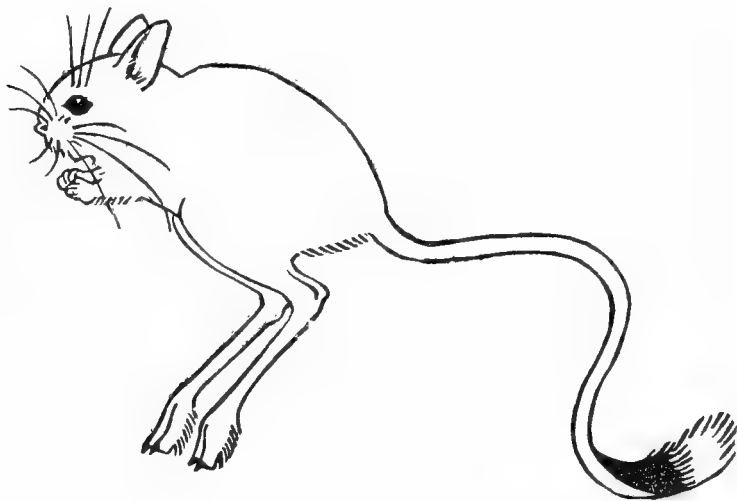
In shape and size there is an infinite variation, though the largest rodents are the Patagonian caviés, (about the size of a small sheep) and the carpinchos (about the size of a small hog), also South American animals.

The order is divided into numerous families, and in a short paper like this one cannot hope to tackle them all. We will therefore confine our remarks to the mouse-like rodents of North China. Here I must ask the reader to allow me some laxity in my definition of North China. Suppose we take the 33rd parallel of latitude as marking the dividing line between North and Central China. I am forced to make this very arbitrary division in order to include certain species which undoubtedly belong to the North China fauna, and yet whose habitat is rather far south. The Zoologist is continually being faced with these difficulties in determining the true boundaries of faunistic areas, for species merge so imperceptibly into each other, that it is often quite impossible to state where one ends and the other begins.

This division will give us plenty to think about, as will be seen before I get to the end of this paper.

Under this heading we have the jerboas (jumping or kangaroo rats), the gerbils (sand rats), the hamsters (pouched rats), the voles (field and water rats), the true rats and mice, and the molerats (under-ground rats).

Before discussing the jerboas, a small jumping mouse must be mentioned. It is called *Zapus setchuanus vicinus*, and occurs in South-western Kansu, but so far none have been recorded elsewhere in North China. There are three other species found in Szechuan.



THE ORDOS JERBOA (*Dipus sowerbyi*).

The most striking jerboa is the Ordos jerboa (*Dipus sowerbyi*), which was discovered by me in 1908 in the Ordos Desert. This animal is about five inches long in the body, and has very long hind legs, very short front legs and a long tail with a fine tuft at the tip like an arrow feather. In colour it is of a sandy yellow with white belly and rump. Its chief characteristic is that it has only three toes on the hind foot. It lives in burrows in the sand, progresses by means of enormous jumps, sometimes eight feet in length, and feeds upon the seeds and tender shoots of the sage brush. It is easily tamed and makes a splendid pet, playing and skipping about the room without the least sign of fear. The Chinese name is Tiao-er (Jumper).

The other species is the alactaga (*Alactaga mongolica*), which inhabits Inner Mongolia and parts of North Chihli and Shansi. The animal is somewhat larger than the Ordos jerboa, has very much longer ears, is of a greyer colour, and has five instead of three toes on the hind feet. Otherwise the two species are very much alike, and have similar habits, except that the alactaga lives in grassy country.

The third form (*Alactaga mongolica longior*) was discovered by me in Kansu, and it is a subspecies of that from Mongolia. It differs only

in having a slightly longer ear and a longer hind foot. The Chinese call these animals Tiao-tu-tzu (Jumping hare), the Mongol name being "alactahai."

Between the jerboas and our next group comes a rat-like animal known as *Sicista concolor*. The only specimens in North China occur in South-west Kansu.

Closely related to the jerboas come the gerbils or sand rats. These beautiful little creatures may be found in the sandy deserts of Asia and Africa, and are characterized by their hairy tails, sandy colour and big black eyes. They have large hind feet and can jump well, though they have not developed along this line nearly as far as have the jerboas. They live in large colonies, and make extensive warrens like those of the rabbit.

In China and the adjacent areas of Mongolia there are three species belonging to this genus. Of these *Meriones auceps* is the largest and most handsome. This species is found in Shansi and Shensi. In colour it is of a rich orange-buff above and white below. The bushy tail is of a redder colour, the under surface being white in many individuals. The eyes are large and black; the ears medium sized. On the whole it is as pretty a member of the rat tribe as exists, and it makes a splendid pet.

Meriones psammophilus is found in both Shansi and Chihli. It is smaller in size than *M. auceps*, and less brightly coloured. As its name suggests it inhabits more sandy areas.

The third species is *Meriones unguiculatus*, which is found in Mongolia, the Ordos Desert and North Shansi. It is much duller in colour than either of the other two species, and has no white about it. It is also diurnal in its habits, whereas *M. auceps* is nocturnal and *M. psammophilus* only semi-diurnal. The Chinese do not distinguish between the three species calling them all Huang shu (Yellow rat).

The hamsters, our next group, are represented in North China by seven species and subspecies. All of these are characterized by the possession of very large cheek pouches, in which they carry food, to be stored up in their burrows. They have short tails, but are otherwise very rat-like in appearance. The largest are the giant hamster *Cricetulus triton*, and its sub-species *Cricetulus triton incanus*. The first of these is an inhabitant of Shantung and Chihli, the second being confined more to Western Shansi. These rats live in burrows, which have a large store chamber, and are reached by a vertical round

shaft. They gather in enormous quantities of grain during the autumn for winter use. One rat will thus get away with a bushel or more of grain, and, when it is considered that in some districts burrows occur every few yards, it will be realised what a pest these creatures may become. I have known of poor peasants' making a living by digging up these graneries. The Chinese name "Pan ts'ang" has reference to this habit, "ts'ang" meaning a store. The giant hamsters are of a pretty grey colour, and are equal in size to the common rat. They are very fierce and bite savagely.

The other Chihli species is the striped hamster (*Cricetulus griseus*) which is not more than four inches in length, and is characterized by having a black stripe down the middle of the back. In shape it resembles the giant hamster, though in colour it is the least bit browner, and has softer, more glossy fur. In habits it is very similar to its larger cousin. A subspecies of this form is found in Inner Mongolia, being known as *Cricetulus griseus obscurus*.

In the hills and mountains of Shansi, Shensi and Eastern Kansu a third species (*Cricetulus andersoni*) exists. It was discovered by Anderson, whose name it bears, in 1907. It is greyer than *C. griseus*, and is without the black stripe. Its tail is longer, but in shape, size and habits the two species are alike. It is extremely common.

The two remaining hamsters differ from these five forms in having furry-soled feet, very short tails and unusually long whiskers. Of these the one found in the Ordos Desert is perhaps the most remarkable. This is an extremely elegant little creature, of a pinky-buff colour above and pure white beneath. It was discovered by Anderson and myself in 1908, when it was named *Cricetulus bedfordiae* after the Duchess of Bedford. Subsequently it was placed in a new genus *Phodopus* by Dr. Gerrit S. Miller of the Smithsonian Institution, on account of the shape of the sole of the foot, the little lobes, noticeable in all other mice, being coalesced into one ball. This hamster is an inhabitant of the sand dunes of the Ordos Desert, and has also been recorded from North-western Shansi. These pretty little creatures make charming pets, being very easy to keep and naturally tame. They have many amusing habits and ways. They will fill their cheek pouches to bursting point with millet or grass seed, distorting the shape of their bodies ludicrously. Then, when teased or disturbed, they will push these pouches with their fore paws, causing the grain to pour out of their mouths. They are scrupulously clean, performing elaborate toilets at frequent intervals in their play, and being of a docile disposition attempt neither to bite nor to run away.

The other species, *Cricetulus campbelli*, resembles the Ordos hamster in shape and size, but differs in being of a pretty grey colour with a yellow line down each side of the body and a black stripe down the middle of the back. It was discovered in Inner Mongolia by an explorer named Campbell, after whom it was named.

Our next group, the voles, includes over a dozen species. In the short space available it is impossible to go into detailed descriptions of all of them.

As a class voles differ from the hamsters in not having cheek pouches and from the true rats in having short tails and short ears, and from both in having heavier, wider and shorter skulls. There are of course many other distinguishing features, notably in the teeth formations, but for our purposes the above differences will serve.

In Chihli, so far as I know only one species has been recorded, though doubtless there are many more. This is *Craseomys regulus*, a large rich coloured vole which was first discovered by Anderson in Corea and subsequently found at the Imperial Tombs east of Peking. In Shansi another species of the same genus was discovered by the same collector in 1907. It was called *Craseomys shansei*. These voles are about four inches in length, and are of a rich red-brown colour. They live amongst rocks in well wooded areas, where the complicated ramifications of their runs may be found under the thick moss.

The second genus, *Microtus*, is very well represented. Two forms of voles belonging to it are found in Inner Mongolia, namely *Microtus angustus*, a long, narrow-headed vole, and *Microtus warringtoni*, a camp-inhabiting species, which was named after Mr. F. W. Warrington, who accompanied me on the trip during which it was discovered. Both of these species are of a sandy yellow colour, the first being somewhat darker than the second.

In Shansi this genus is represented by at least three species. Of these *Microtus johannus* and *Microtus pullus* were both new discoveries of mine. The third, which was first discovered by David is known as *Microtus mandarinus*. This species has a very big heavy skull for its size, and inhabits the plains.

M. johannus and *M. pullus* are mountain inhabiting species. The former is of a pale sandy-brown colour, and keeps to open mountain tops, while the latter is very much darker and lives in the forested areas.

In Kansu the genus is represented by two recently discovered species. One, named *M. malcolmi* after its discoverer Mr. Malcolm P. Anderson, differs from all the foregoing in having a very much more

arched skull. It approaches more nearly to *M. calamorum* the Yang-tze reed-vole. The other, *M. oniscus*, was a discovery of Dr. J. A. C. Smith, and is a very small member of the genus.

In South Shensi occurs a subspecies of *M. calamonum*. It was recently described as new under the name, *M. c. superbis*. It is very much larger than any of the species hitherto mentioned.

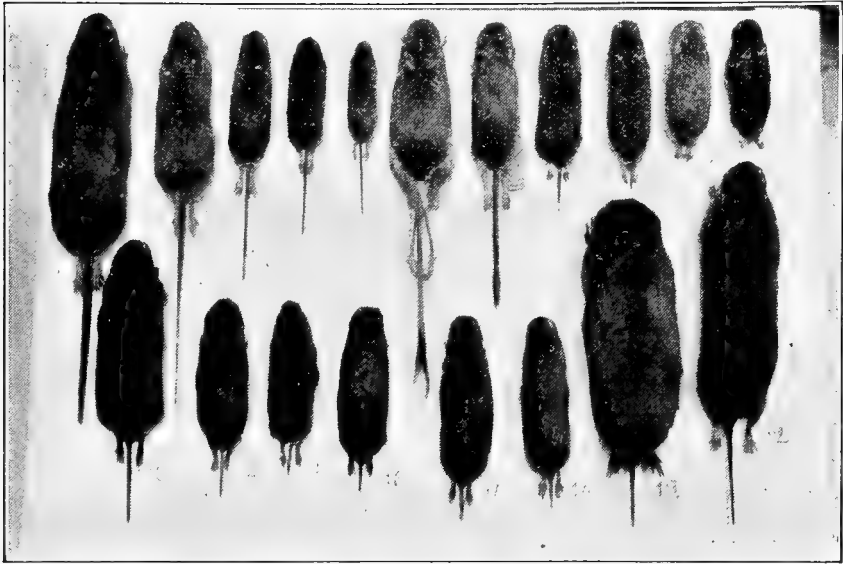
There are two subgenera of the genus *Microtus*, namely *Microtus* (*Caryomys*) and *Microtus* (*Ethenomys*). The first of these is represented by three species, namely *Microtus* (*Caryomys*) *inez* from West Shensi, *M. (C.) nux* from South Shensi and *M. (C.) eva* from West Kansu,—all of which were discovered by Anderson. These are small rich coloured voles. *Microtus* (*Ethenomys*) *melanogaster* is the only member of the second subgenus so far discovered in China. It is found in Western Kansu as well as in Sze-chuan.

A third genus, *Proedromys*, has also recently been described from Western Kansu. So far it contains only one species, *Proedromys bedfordi*. This species is mainly characterized by its excessively long hair. Otherwise, in general appearance it resembles *M. malcolmi*. I have recently secured some interesting voles from Manchuria but these are as yet unidentified. There are also many species in other parts of China, notably in Sze-chuan province, which, however, do not concern us in this paper. As far as my experience goes, none of these voles make good pets, being excessively shy and inclined to bite, when their sharp and powerful teeth inflict nasty wounds. Many of them seem to be partially diurnal in their habits, though one or two are purely nocturnal.

The next group we have to consider is that of the true rats and mice. Under this heading we have twelve species and subspecies, contained in the four genera, *Mus*, *Epyms*, *Apodemus* and *Micromys*.

In the first of these comes the common rat (*Mus rattus*), the common mouse (*Mus wagneri*) and its sub-species *Mus wagneri mongolium*, none of which need any description, except to say that the subspecies *M. w. mongolium* is slightly darker than *M. wagneri*. In Manchuria I have found an even darker coloured form. *Mus gansuensis* is another closely related form, found in Western Kansu.

The genus *Epyms* includes what have been called the rock or sulphur-bellied rats. These are comparatively large animals not unlike the common rat, but of a more delicate build, with longer ears and longer, more hairy tails. There is a tendency to spinyness in the hair of the back, and three, at least, of the four forms have pale sulphur-yellow belly fur.



RATS AND MICE.

Photo by W. A. Mace.

FROM LEFT TO RIGHT. TOP ROW.

1. COMMON RAT (*Mus rattus*). 2. ROCK RAT (*Epymis confucianus laticolar*). 3. WOOD MOUSE (*Apodemus speciosus*). 4. FIELD MOUSE (*Apodemus agrarius*). 5. COMMON MOUSE (*Mus wagneri*). 6. JERBOA (*Dipus sowerbyi*). 7. GERBIL (*Meriones auceps*). 8. ANDERSON'S HAMSTER (*Cricetulus andersoni*). 9. STRIPED HAMSTER (*Cricetulus griseus*). 10. ORDOS HAMSTER (*Phodopus bedfordiae*). 11. CAMPBELL'S HAMSTER (*Phodopus campbelli*).
1. REED VOLE (*gen. et sp. incon.*). 2. RED-BACK VOLE (*gen. et sp. incon.*). 3. SHANSI VOLE (*Crascomys shansicus*). 4. MOUNTAIN VOLE (*Microtus pullus*). 5. LONG-HEADED VOLE (*M. angustus*). 6. WARRINGTON'S VOLE (*M. warringtoni*). 7. MOLE RAT (*Myospalax cansus*). 8. GIANT HAMSTER (*Cricetulus triton*).

They inhabit the rocky sides of valleys, are very voracious and are easily trapped. They do little or no damage to crops, their favourite food being carrion and other animal refuse. They have been known to attack sick people, and some grisly tales are told of wood cutters or charcoal burners, who, working alone in out of the way places, and having fallen ill, have been horribly gnawed before help could reach them.

The three forms found in Shantung, Shansi, Shensi and Kansu are sub-species of the Sze-chuan form *Eymis confucianus*. The Shantung species, *Eymis confucianus sacer* is larger and heavier than the others. The Shensi and Shansi form is a pale coloured animal called *Eymis confucianus luticolor*; while the Kansu species *Eymis confucianus canorus* is intermediate between the *E. c. sacer* and *E. confucianus*.

One other rat belonging to this genus and found in the North China area is *Eymis ling*, which is very much yellower in colour than *E. confucianus*.



THE WOODMOUSE (*Apodemus speciosus*).

The third genus, *Apodemus*, contains the wood and fieldmice. Of these the woodmouse (*Apodemus speciosus peninsulæ*) is perhaps the commonest. Rat-like in appearance this animal is very much smaller than the common rat and is found in mountainous and well-wooded country. Its range extends from Western Kansu to Eastern Chihli and from North Shansi to South Shensi. It may be found wherever there are woody, or even scrub covered hills, ranging from

three thousand up to ten thousand feet. It is of a rich brown colour, with a tail as long or longer than its body.

The fieldmice are divided into two sub-species, *Apodemus agrarius pallidior* and *Apodemus agrarius coreæ*. The latter is found in Shantung and Chihli, the former in the provinces westward. These mice are like *A. speciosus* in colour, but have shorter tails and ears, and are distinguished by a black line down the middle of the back. They occur in the open plains and on hilltops, where there is some sort of small cover. In Kansu a third species, *Apodemus fergussoni*, is found. It resembles the field mouse in proportions and colour, but is without any trace of the dark median dorsal line.

The fourth genus *Micromys* is represented by but one species, namely *Micromys minutus*, which is found in Southern Shensi. This pretty little mouse is commonly known as the harvest-mouse, and is much the smallest of all the mice. In passing it may be mentioned that *A. agrarius* and *A. speciosus* were originally consigned to the genus *Micromys*.

Our last group, the molerats, is an extremely interesting one. It is represented in North China by at least six species of peculiar mole-like rodents. Molerats live underground where they excavate extensive burrows in their search for the roots and bulbs, upon which they subsist. They have soft thick fur like that of the mole, enormously developed front feet and claws for digging, rudimentary eyes, and no external ears. Their tails are hairless and extremely sensitive. They have blunt flat noses, very powerful teeth, and heavy skulls. In short, they are built for digging in the close-packed and dry soil of North China. They do considerable damage to crops, and in some districts are relentlessly hunted by the Chinese farmers in an endeavour to exterminate them.

The generic name of this group of rodents is *Myospalax*, and as already stated, contains some six species in North China, namely *M. fontanieri*, *M. fontanus*, *M. cansus*, *M. psilurus*, *M. smithii* and *M. rothschildi*.

Of these the two first were at first confused with one another, but later *M. fontanus* was described as a distinct species from specimens secured by Anderson and myself in Western Shansi. *M. fontanieri*'s true habitat is in the neighbourhood of Peking. In colour *M. fontanus* is of a fine slate-grey. It is a very large rodent, with a heavy well-ridged skull. There is almost invariably a white diamond-shaped patch on the forehead.



THE KANGAROO ALLACTAGA (*Allactaga mongolica longior*)



THE BUZZARD (*Buteo hemilascus*).

M. cansus is found in Shensi and Kansu, is considerably smaller than the Shansi form and is of a much browner colour, the grey being clouded or washed with light chocolate.



THE MOLERAT (*Myospalax fontanieri*).

M. psilurus is the species common to Chihli. It resembles *M. cansus* in size and appearance, but has some differences in the skull.

M. smithii is related to *M. fontanieri*, and was discovered by Dr. Smith in South-western Kansu, as also was *M. rothschildi*. This species is the smallest known, somewhat resembling *M. cansus*.

Molerats are very easy to keep alive, but are of too savage a disposition to make good pets. One I owned was allowed the freedom of the room, and one day it bored its way through the entire thickness of the bedclothes,—mattress, blankets, quilt and all.

CHAPTER XI.

SQUIRRELS, MARMOTS AND PIKAS.

AMONGST the best known and most popular of all the numerous members of the great order *Rodentia* are the squirrels. The typical member of this large family (*Sciuridae*) is the common squirrel (*Sciurus vulgaris*), whose habitat extends from the western coasts of the British Isles, right across Europe and Asia to the eastern shores of Japan. Naturally in so great an extent of country a considerable variation is found amongst the squirrels, though in essential characteristics the varieties of the common squirrel agree. In Great Britain the coat is red, even in winter. In some places the coat is red in summer and grey in winter, while in others, such as those in Manchuria, the pelt is grey in summer and winter. Thus it is known respectively as the red squirrel, the grey squirrel and the fur squirrel.

Most people are familiar with the appearance of the common squirrel. It is characterized by having a very soft coat, a long bushy tail and tufts on the ears. In this last particular it differs from all the other squirrels, except the red-squirrel (*S. hudsonianus*) of North America.

In North China the common squirrel is very rare, occurring only in the heavily forested regions. It has been recorded from the forests (now being demolished) of Northern Chihli. I have heard of it in West Shansi, but have never seen it there. It also occurs in Western Kansu and in Manchuria, in which two areas it is fairly plentiful. At one time it must have been very much more common in China Proper, but, like every other animal in this country, which is capable of being turned into money, has been so persecuted that it is very nearly extinct.

There are few pets more entertaining than squirrels, but they are seen at their best, when, having been taken young, are allowed the freedom of the house and garden. Their little tricks and habits are most interesting, and they become so tame that they will not desert for the wilds again.

Beside the common squirrel there are at least three species of flying squirrels found in North China, not to mention the ground or striped squirrels and their allies the susliks and marmots.

Of the flying squirrels two are large species belonging to the genus *Pteromys*. Both of these were originally described from the forested areas of North-eastern Chihli. They are large rodents with wide, fur-covered membranes stretching along the sides of the body, joining up the front and hind limbs. An elongated bone from the wrist supports this membrane in front, while it also stretches from the back of the hind limbs and embraces the tail. Thus when the animal spreads out its limbs it becomes, as it were, a living parachute, so that it can jump from the top of a tree, and by utilizing the resistance of the air vol-plane a considerable distance,—it is said upwards of forty yards.

The two species recorded are *Pteromys xanthipes* and *P. melanopterus*. The former is of a rich chestnut-red colour with a white head, the latter of a dull grey-brown.



THE FLYING SQUIRREL (*Sciuropterus buechneri*).

The third species is much smaller, and belongs to the genus *Sciuropterus*. This is a pretty little creature, related to the American flying squirrels. It is about the size of the common rat, and has a fine, very soft coat of grey, tinged in places with buff. The underside is grey-white, the cheeks silver-grey. The tail is bushy but flat, the sides being buff, the lower surface black, with a black line down the upper surface. What makes this squirrel one of the most beautiful of its kind are the enormous black eyes. The wing-membrane is not so broad as in the foregoing genus, nor is it continued behind the hind legs. The species was named *Sciuropterus buechneri* from specimens obtained in Kansu. In the winter of 1909-10 I secured several

specimens in the forests of West Shansi. These, for the present, have been assigned to the Kansu species. The natives brought me several live specimens, one of which I kept for some months. It became very tame, but died during the summer heat. Very lively and active, the members of this genus are amongst the most beautiful denizens of the forests. They are nocturnal in their habits. During the day they hide in holes in hollow trees, coming out at dusk to play about and gambol in the prettiest way. Racing up one tree to its topmost branch, they fling themselves into the air, with legs outstretched, and glide swiftly towards the trunk of another. At the end of the flight they rise slightly and alight upon the desired tree, when they scramble upward to repeat the manœuvre. At the slightest sign of danger they dodge behind the tree trunk, or press themselves flat upon the limb, when their protective colouring at once renders them invisible.

Other species have been described from Japan, Saghalien and Corea.

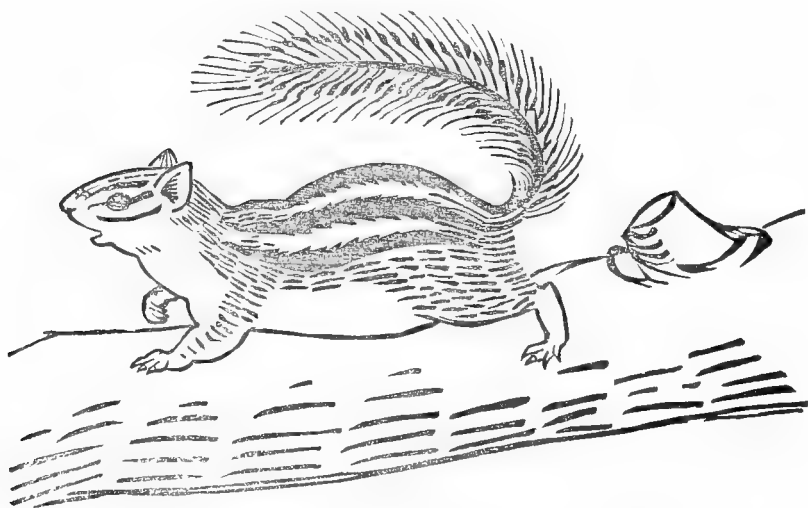
One of the commonest squirrels in North China is David's squirrel (*Sciurotamias davidianus*), which belongs to a genus intermediate between the squirrels and the chipmunks or ground squirrels. About the size and appearance of the common squirrel, it is at once distinguishable by the absence of ear-tufts, and the browner colouring, which is caused by the otherwise grey hairs being tipped with buff. The long hairs of the bushy tail are tipped with white. A light buff ring encircles the eye and there is a light patch behind the ear. The belly is grey washed with buff.

This species occurs in mountainous and hilly regions all over North China. It possesses large cheek-pouches, in which particular it differs from the common squirrel, but resembles the chipmunks. Though it can climb trees, it is more of a rock and cliff inhabiting species, nesting in deep cracks and crannies.

I found these squirrels extremely plentiful in the mountains of South Shensi. Here the natives told me they form a regular pest, and are as bad as rats in the way they enter the houses and steal grain and food.

The chipmunks are little striped squirrels, which keep to the ground, excavating deep burrows, and living chiefly upon the seeds of herbs and small plants. These they store in specially constructed chambers in their burrows. They are graceful little creatures, being beautifully marked. The crown is of a grizzled brown, while the sides of the head are marked with three bands of dark brown, which extend

respectively from the nose, above, through and below the eye, the space between being of a creamy white. The cheeks are buff and the throat creamy-white. Five dark stripes, which vary from a rich brown to black according to the species, extend down the back, the intervening spaces being occupied with white or light grey. All the stripes merge into a light chestnut or raw sienna patch on the rump. The flanks are ochraceous, the belly light buff. The long bushy tail is ochraceous down the middle, edged with black, the long hairs being tipped with white. As already indicated chipmunks have large cheek-pouches in which they carry the proceeds of their foraging expeditions. They are excessively lively and active; are diurnal in their habits, and unlike any of the foregoing species, go into retirement for the winter.



THE CHIPMUNK (*Eutamias asiaticus senescens*).

They make a peculiar chirping noise, which is very hard to locate, seeming to come from all parts of the compass at once.

When the wild apricots are on, these little creatures climb the trees for the fruit, and can easily be caught with cunningly set snares, made by the natives out of horse hair. When taken young they make splendid pets, but adult males are inclined to be savage, and can bite very severely. One which I brought from Kansu, and which had been kept in captivity ever since it could eat, grew so fierce that it would attack human beings, and climbing up their clothes try to bite their hands and face. It was kept in an empty room, and

strongly resented any intrusion. It met its fate one day when it attacked a large Tom cat.

The first species was described by Pallas under the name of *Eutamias asiaticus* from the mountains west of Peking. Dr. Miller described a sub-species *E. a. senescens* from the mountains west of Peking. Anderson and I secured specimens from the Ordos Desert, which were very much paler and more buff coloured than the last mentioned, and so were described as distinct under the name of *E. a. ordinalis*. A third sub-species, intermediate between the Chihli and Ordos forms was also described from our collection, being called *E. a. intercessor*. This last inhabits the mountainous areas of West Shansi. Some chipmunks secured by me in Manchuria show a very much darker colouring, while other species and allied genera occur in Sze-chuan and elsewhere.

Related to the chipmunks are the susliks or, as they are more popularly called, "gophers." These are often referred to as ground squirrels. They are small rodents not unlike squirrels, but having short, less bushy tails and very small ears. They are also purely terrestrial, being unable to climb trees. They inhabit plains and desert areas, excavating deep and extensive burrows, for which purpose their fore-paws are larger and more powerful than those of the chipmunk, and are armed with long, sharp claws. Their bodies are long and their limbs short, which characteristics, with their short ears and tails help them in their semi-subterranean lives. They feed upon different herbs and small plants, which grow at convenient distances from their burrows. If they can get at fields of grain they will work great havoc. They seldom go far from the mouths of their burrows, and keep a sharp look out for enemies, whom they escape by diving underground. They may often be seen sitting up like sentinels upon the mounds of earth, which they raise beside their burrows. Scanning the open plain in every direction, they make sure that no enemy is near ere they will go foraging, and it is a difficult matter for any wild beast to approach them. Man they seem to scorn, and so can be caught easily. They are diurnal in their habits, and, like the chipmunks, hibernate during the winter. In colour they are of a uniform sandy-grey, slightly darker above.

One species, *Citellus mongolicus*, occurs in North China, a sub-species, *C. m. umbratus*, having been described from the grasslands of Inner Mongolia.

A very large, closely related genus is that of the marmots, which is represented in North China by a single species (*Marmota robusta*).

This rodent, which is somewhat larger than a hare, occurs in China proper only in the extreme west of Kansu, but is plentiful in Eastern Mongolia and the neighbouring portions of Manchuria. In Kansu it is known by the Chinese as "Ta-la," and in Manchuria as "Han ta" (Dry otter), while the Mongol name is Tarrabagan. This is one of the few fur-producing rodents of North China. At the time when the pneumonic plague was raging in Manchuria it was thought that this creature was largely responsible for its origin and spread, but careful investigation has shown this idea to be erroneous.



THE SUSLIK (*Citellus mongolicus*).

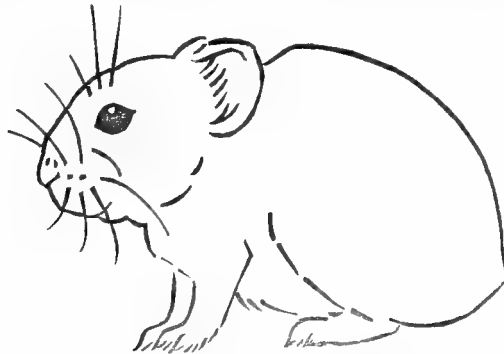
Our next genus, *Ochotona*, consists of small rabbit-like rodents, commonly known as pikas. They resemble the rabbit family in having only four toes on the hind feet, furry soles and an extra pair of very small incisor teeth behind the two large ones in the upper jaw. They differ from the rabbits and hares in having extremely small tails, which do not even appear through the skin of the body. They also have smaller, more rounded ears. They are very much smaller than any of the rabbits, the largest not exceeding eight or nine inches in length.

Like rabbits they burrow a great deal, making extensive warrens. They also have little beaten tracks or runways between the rocks, and ramifying through the underbrush, in which they live. Their food consists of grass and small herbs. In the case of the Siberian pika,

they heap up large stores of grass near their burrows, doubtless for winter consumption. I have never noticed anything of the sort in connection with any of the Chinese species. They seem to be semi-diurnal or semi-nocturnal, for I have found them early in the morning in traps set overnight. I have also trapped them during the day. It may be that they commence their foraging at the first sign of dawn, and do not actually come out at night. They do not hibernate.

The race seems to be eminently adaptive, for species occur in the arid wastes of the Ordos, on the grassy plateau of Inner Mongolia, in the forested areas of West Shansi, amongst the loess hills of Shensi and Kansu and on the highest mountains of the central and western provinces.

Altogether some eight species and sub-species have been described from North China, including one from Inner Mongolia.



THE PIKA (*Ochotona bedfordi*).

One of the first known species was *Ochotona dauurica*, which occurs in Inner Mongolia. It was originally described from the Urga district in the north. This species in its summer pelt is of a grey-brown colour above, with light grey under parts. The flanks are lighter than the back, while the chest is of a buff colour, the chin grey-white. The upper part of the back of the ear is black. The adult is about eight inches in length. It inhabits the sides of low hills, having preference for scrub patches, beds of stinging nettles or rocky screes. It frequently takes up its quarters in disused badger holes, or "setts" as they are called, excavating long galleries and tunnels in the walls of the latter. It is very difficult to catch pikas in traps which require the taking of bait, but an ordinary "gin" set in one of their runways catches them easily enough.

Further west in North Shansi, in the Ordos Desert and in North Shensi this species is replaced by another lighter form known as *O. bedfordi*. This was described from specimens taken by Anderson and myself in West Shansi. Its chief characteristics are its very much paler pelt and slightly larger size, while the skull was described as being slightly larger, less convex on the forehead, with larger brain-case, very much larger bullae, and as being broader than in *O. dauurica*. These pikas we found occupying sites at various altitudes in the loess hills. Some were in colonies on the plains and in river valleys, while others would be located in the deep loess gullies and ravines or on the steep sides of the hills. Specimens from Yen-an Fu in North-central Shensi agree in skull measurements with those from the type locality (Ning-wu Fu) in West Shansi, but the winter pelts are somewhat different. Those from Shansi are somewhat darker and more ochraceous in colour than those from Shensi.

On the Clark expedition in 1909 I secured specimens in Eastern Kansu of yet a third species, which was called *O. annectens* by Dr. Gerrit S. Miller of the U.S. National Museum. This species, though resembling the Shensi pika, is somewhat smaller, and has smaller bullae and more convex upper cranial outline. It was only in Kansu that I ever saw pikas playing about in broad daylight, and I was struck by their remarkable resemblance to rabbits in the way they moved and fed. I secured some live ones, which I tried to tame, but the little creatures were altogether too timid to endure handling, and refused to eat.

From Western Kansu Prof. Matschie has described a species under the name of *O. huangensis*, which more closely resembles *O. dauurica*.

In the forests of West Shansi, when on the Duke of Bedford's Exploration of Eastern Asia I discovered a small wood-pika, which was described as new by Mr. Thomas, who gave it the name *O. sorella*. Only one specimen was secured at that time, but I secured a second on a later trip. No other specimens have yet been obtained. This pika is very much smaller than any of those already mentioned. It is considerably darker in colour than *O. dauurica* and the hair on the soles of the feet is very dark. It keeps entirely to wooded mountains, amongst the moss-covered boulders of which it excavates extensive and complicated burrows. It seems to be a very rare species.

Related to it is *O. cansa* from Kansu, described by Lyon. This species is larger, however, and has larger bullae and a less convex skull.

A sub-species of *O. cansa* has recently been described by Mr. Thomas from the Tai-pei Shan in South Shensi, under the name of *O. c. morosa*.

In the same district, yet another species has been newly described by the same authority. This is *O. syrinx*, and is related to *O. cansa*, but is much larger, and has smaller bullae.

These eight species are all very much alike in external general appearance, the noticeable differences being mainly in their sizes and different shades of colour.

CHAPTER XII.

THE GOLDEN EAGLE AND OTHER BIRDS OF PREY

FROM time immemorial the eagle has been invested with the stamp of royalty. We have been familiar with the Roman Eagles from our earliest schoolboy days, and most of the present day Sovereigns in Europe have the eagle in some form or other upon their coat of arms. Even the Republics of America and Mexico have chosen the eagle to form some part of their heraldry.

What is it that has singled out this bird above all others as the emblem of authority, conquest and even freedom? Was it not its regal bearing, its strength and power, its fierce disposition that first recommended it to the old world conquerors, who handed it on to their Cæsars and Kaisers? Ever since it has been idealised in our story books, and we have come to look upon it as the bird of birds.

And so it is in many respects. No bird has so markedly that piercing glance, those overhanging brows, that noble poise of head and that grace and perfect equilibrium in the air. The vulture may be larger and also graceful on the wing, but there is something mean and disreputable about its naked head and neck, set so deeply between its shoulders. The yellow eye of the hawk may flash more fiercely, but the bird lacks size and dignity, while there is something indescribably comic about the owl.

There are a great many kinds of eagles, but the one most familiar to us is the golden eagle (*Aquila chrysaetus*), so called on account of the light colour of its long neck feathers. In size this bird may be compared with a good sized turkey. Its spread of wing may reach six or seven feet, though the latter measurement is unusual.

Of a general dark brown colour, it has some white on the wings and tail, the tips of which are black. The powerful talons are of a bright yellow colour, with long sharp claws of black. The legs are feathered right down to the feet. The beak, which is not as large as in some species, is black, with bright yellow base. The eyes, which are set deeply under beetling brows, are of a rich brown.

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In China the golden eagle is found all over Shansi, especially in the mountainous parts and throughout Shensi and Kansu. It is very common in Mongolia, where it nests on the ground, there being, as a rule, neither cliff nor tree. In other places it builds its nest high up on rocky cliffs. The female, which is larger and fiercer than the male, usually lays two eggs. The young when hatched are covered with soft, white down. They grow very rapidly and can fly in August. Sometimes the parent birds commence nesting very early in the year.

When attacking its prey the eagle uses its talons, striking and clutching as it swoops down upon its victim. The beak is only used for rending after the animal is killed. In Central Asia this bird is used to kill large quadrupeds and birds. It will strike down a fox or antelope.

Golden eagles make good pets, though they want careful handling, and must be given plenty of space—the more the better. They are best when taken young, for then they do not try to escape as older birds do, nor does one feel so bad about depriving them of their liberty. They can be fed on scraps of raw meat, and should not be given too much. Six ounces a day is ample. I have frequently had young ones in my possession, but have usually ended up by setting them at liberty. Of two I once had, one became quite docile, the other, however, remaining fierce and intractable. When I approached the latter it would fly at me and strike with its claws, which it once succeeded in burying in my forearm.

One in my possession now I picked up in Mongolia. It is quite tame and will feed from the hand, though it does not like to be handled. One evening a cat got into its cage to steal its meat. With a scream of fury the eagle pounced upon the thief, and but for timely interference would have killed it.

In the wild state the golden eagle is not easily approached, except where it is very plentiful. It feeds upon hares, birds, small rodents and carrion. In some places the last mentioned seems to be its chief diet. I have frequently seen eagles feeding upon the corpses of beggars and children, which have been left unburied in the fields.

The spotted eagle (*A. clanga*), a much smaller bird, is also found in North China, its range extending into South China. It may be recognized by its plumage, which is spotted in immature specimens on the wing coverts, rump and belly.

Another eagle found in North China is the white-tailed sea-eagle (*Haliaeetus albicilla*). This bird rivals the golden eagle in size, and has a heavier bill. It is much lighter in colour and has a white tail. The

beak, legs and eyes are yellow. Though a sea eagle it travels up the courses of large rivers for considerable distances inland, and may be seen circling round offal and debris scattered over the alluvial plains by the flood waters.

Closely related to this species is the bald-headed eagle (*H. leucocephalus*), which is characterized by having a white head, not, as the name seems to imply, a bald one. This species does not keep so much to the river courses, but may be found in hilly and mountainous districts.

H. pelagicus, a very large species, has been seen once in China by Père David. Its true habitat is North-eastern Asia, where it has been recorded as breeding in great numbers in the Sea of Okhotsk. This bird is remarkable chiefly for its enormous yellow bill.

Much the largest bird in North China, that is at all related to the eagles, is the black vulture (*Vultur monachus*). This bird has a spread of wing as much as nine feet and over. One I measured was nine and a half feet from tip to tip. This specimen now stands in a museum in Tai-yuan Fu. The black vulture is very rare, being found only in high mountainous country. As its name suggests it is of a uniform dull black colour. Its legs are of a deep carmine, and are comparatively weak, with small claws. It has an enormous black beak, and a naked neck, at the base of which is a fine ruff of feathers. The head is covered with fine, black down, growing into a tuft at the back.

A much commoner vulture is the lammergeier (*Gypaetus barbatus*), which is fairly plentiful in Western Shansi. This large bird differs from most vultures in having the head and neck entirely feathered. Its talons, though not so powerful as those of an eagle, are, nevertheless, much stronger than those of the black vulture, which bird it also rivals in size. The lammergeier is of a brown colour above, paler on the throat and breast, merging into a fine chestnut on the belly. It has a long wedge-shaped tail. The beak is sharply hooked, and there is a small tuft of feathers on the chin like a beard.

A bird that might almost rank with the eagles is the osprey, or fish-hawk (*Pandion haliaetus*). Though not so large as the eagle, it is a fine, handsome bird, with dark upper parts and white breast, belly and legs. It has very powerful talons, which are white in colour. It lives upon fish, which it catches by pouncing upon them as they come to the surface. It will pull a fish of three or four pounds weight out of the water, and carry it off to its nest or some dead limb high up on its favourite tree. The nest, which is enormous, is usually built at the

top of some high tree. The osprey is not very plentiful in North China proper, but I saw a great many in Manchuria along the big rivers.

Beside these large birds there are a great many smaller birds of prey found in North China. There is the kite (*Milvus melanotis*), which occurs everywhere, from the coastal towns and regions to the Mongolian Plateau or the Archaic ranges of the west. This bird is in the main a scavenger, though it is credited with carrying off chicks and other young poultry. It is often mistaken for the eagle when in flight, but it may readily be distinguished from all other birds of prey in this country by its forked tail.

A bird that about equals the kite in size, and somewhat resembles it in appearance is the white-tailed buzzard (*Buteo hemilasius*) though its plumage is considerably lighter, and its feet are yellow instead of blue-grey. This bird is not a scavenger, though it is not so good a hunter as many other hawks, being somewhat slow and clumsy. I have seen one chasing a peregrine to rob it of a partridge, which it had caught. The buzzard, though much the larger bird was unable to overtake its victim, in spite of the heavy weight the latter was carrying.

Birds belonging to this species are very common in the loess hills of North and West Shansi, where they build their nests on ledges or outgrowing shrubs on high cliffs. They love to perch on the tops of tall trees and buildings, whence they may command a wide view. It is almost impossible to get a shot at them, for they are very shy and wide awake. In Mongolia I came across a large buzzard which was very light in colour with a white head.

A much smaller species, *B. plumipes*, also occurs. It is common in North-east China, but is not often met with in the west.

The next bird in point of size is a gerfalcon (*Falco sacer*), a fine hawk, noted for its fierceness and speed, and much valued by the falconer. This and the next species are used a great deal by the Chinese in the pursuit of small game. I have described the mode of procedure in this sport elsewhere, so will not do so again.

In England some attempts have been made to revive falconry, but without much success. So much time and patience is required in training the falcons and in keeping them so.

The peregrine (*Falco peregrinus*) is also very common in China, chiefly in hilly and mountainous districts. This bird may readily be recognized by its dark blue-black back, white throat and closely barred, grey breast. It is of a lighter, more slender build than the gerfalcon.

Plate XVII.



THE GOLDEN EAGLE (*Aquila chrysaetos*).

The female is of a browner colour, and has not the fine, barred breast of the male, but is larger and fiercer. Like most of its kind the peregrine builds its nest in high cliffs well out of reach of its enemies.

The sparrow hawk (*Accipiter nisus*) is very common in this country. This pretty little hawk is chiefly remarkable for its unusually long legs. The Chinese also use this species in falconry, though it catches only small birds. The well known kestrel (*Cerchneis tinnunculus*) is also very common in North China, and may be recognised by its light brick red back and breast, and grey head and wings. The female is brown spotted with a darker shade. This bird may frequently be seen hovering in the air for seconds together, only its wings beating rapidly to keep it in position.

Another small hawk that is very common is the Amour red-footed falcon (*Erythropus amurensis*). The plumage in this species is of a uniform blue-grey, slightly lighter below. Its under tail coverts are of a rich Indian red colour. The base of the beak, eyelids and legs are also red or orange in colour. This and the two preceding species build their nests in tall trees.

A hawk that should be familiar to every wild fowler is the beautiful hen harrier (*Circus cyaneus*), which frequents marshy districts, feeding upon small aquatic birds and animals. It is of a fine grey on the head, back, wings and tail. The breast is grey and the belly white. The base of the beak, the eyes and the long legs are of a bright light yellow. The female is brown. These birds have very long wings, and are extremely graceful. In Manchuria a harrier with a black head and back, black and white wings and belly is very common. It is known as *C. melanoleucus*.

Finally we come to the nocturnal birds of prey. There are some eight different species of owls, ranging from the great eagle owl, which is about thirty inches in length, down to the little scops owl, not more than seven inches.

The eagle owl (*Bubo maximus*) is almost the largest of its kind. It is of a brown colour, lighter on the breast than elsewhere, very prettily marked with dark brown and black bars. It has two long tufts like ears growing from the top of the head. The eyes, which are very large, are of an orange colour; the feet are feathered, except on the under surface, and are armed with long powerful claws. The eagle owl inhabits mountainous and forested regions throughout North China and Manchuria, where it may frequently be seen at dusk, flying silently over the tree tops in search of food.

Next in size are the long-eared owl (*Otus vulgaris*) and the short-eared owl (*Otus brachyotus*), both of which frequent mountainous regions as well as the plains. Of these the long eared owl is the more graceful, having longer wings and tail. In colour and markings both are very similar to each other, and to the eagle owl.

A brown owl (*Nenox japonica*) also occurs, besides two wood owls (*Syrnium fuscescens* and *S. niviola*) both very rare.

The little owl (*Athene plumipes*), as a small rock or loess-inhabiting species is called, is no larger in the body than a quail, but with its fluffy feathers it looks the size of a half grown pigeon. It has no tufts on the head like the other owls of North China have. As already indicated it frequents the holes and ravines in rocky or loess hills. When it comes out in the evening it makes a cackling noise something like that of the chukar. It is of a light brown colour on the back marked with white or buff dots. Its breast is buff with dark markings. With its quaint little ways and tractable disposition it makes a charming pet. There can be no more amusing sight than one of these little birds attacking a cat or terrier. With every feather on end, eyes wide open and uttering shrill, piercing screams, it presents a sufficiently fierce appearance to daunt the boldest dog.

The last species we have to consider is the scops owl (*Scops scionotus*), a beautiful little creature no bigger than a starling. It is of a dark grey-brown marked with bars of a deeper shade. It has bright yellow eyes and ear-like tufts. Usually it hides up in old temples, coming out in the evening at dusk. Woe betide the sparrow who so much as stirs a feather, when this fierce little marauder is about; for like lightning it will detect the whereabouts of its prey and swoop upon it in the dark, uttering a series of shrill, piping screams, apparently to disconcert its victim and so render capture more sure.

CHAPTER XIII.

PHEASANT SHOOTING.

TO-DAY, the 1st of October, pheasant shooting beings at home, and doubtless many a Tientsin sportsman is wishing that he too might shoulder his gun, and with his favourite pointer go for a happy day amongst the pheasants. As this is quite out of the question for most of us, let us indulge in a little armchair travel, and derive what comfort we can from a quiet contemplation of the noble sport over our coffee and toast.

On the merits of pheasant shooting, compared with other forms of sport, in which the shot-gun plays the leading part, one need say nothing. The fact that it is by far the most important sport of its kind at home speaks for it.

The common pheasant (*Phasianus colchicus*) was introduced into Western Europe by the Romans, who brought it from its home in South-eastern Europe and Asia Minor. When it reached Great Britain is not exactly known.

This bird is a handsome fellow, with its rich orange-brown, and old gold plumage, dark green head and fine, well marked tail, the whole shot with a purple or coppery sheen. There are something like thirty sub-species or local races of the common pheasant, all of which are characterized by the red-brown or orange colour of the upper tail coverts. They range from Persia westward, and so, being more or less out of our way, call for no further comment in this paper.

From Persia eastward right to the islands off the coast of China, we have a great number and variety of pheasants. What are known as the true pheasants are characterized by having wings more like those of the partridge, with the first flight feather much longer than the tenth, by the absence of any crest, though the ear tufts are elongated in the males, and by the presence in the males of spurs. They differ from the true pheasants west of Persia in having the upper tail coverts of a grey or pale green colour..

These are the birds which give us the best sport, and which have from time to time been introduced into Great Britain, so that now, it is said, it is impossible to find a pure bred bird in that country.

The Chinese pheasant is represented by several local races. They are all distinguished by more or less pronounced white collars, extensive grey-green upper tail-coverts, orange brown breasts, shot with a purple sheen, and long, barred tails.

The bird inhabiting North-eastern China has been called *Phasianus kiangsuensi*, and is characterized by the very broad and complete white collar and a whitish eyebrow. The Yang-tze bird is known as *P. torquatus*. In this species the white collar is incomplete in front, the sides are very much lighter than in the northern bird, while the sheen on the green neck is purple, not green, as in the other.

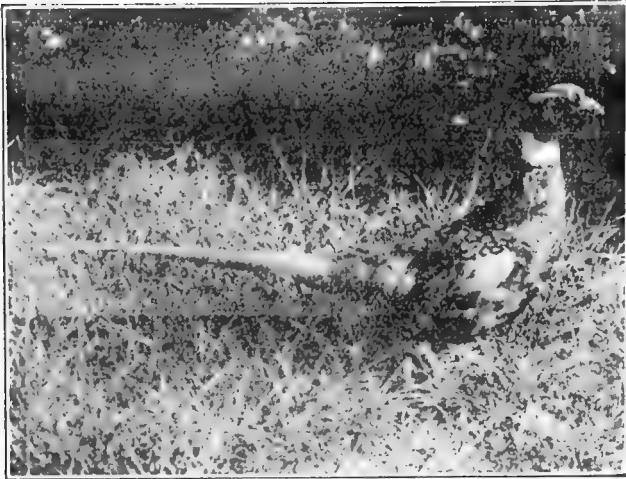
In South China the pheasant is represented by *P. satschennensis*.

In Western Mongolia the species is represented first by *P. semitorquatus*, and still further west by the Mongolian pheasant (*P. mongolicus*), which is characterized by its superior size and white, instead of grey, wing coverts.

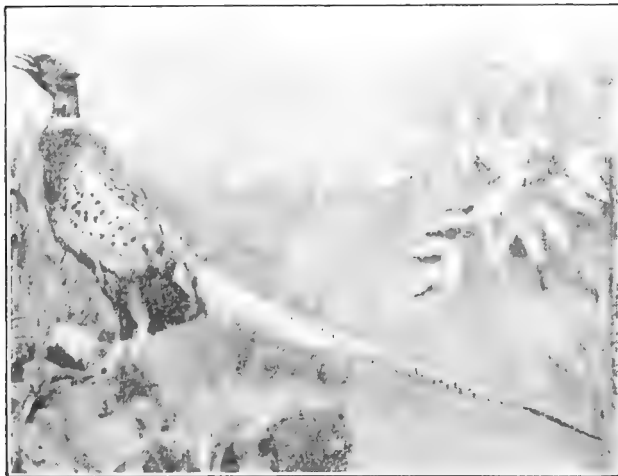
One other true pheasant calls for notice, and that is the famous Reeves' pheasant (*Syrnaticus reevesii*), which inhabits Central, North-eastern and Western China. This magnificent bird is distinguished by the enormous length of its tail, which reaches five or six feet, and is handsomely barred with black and white. The plumage of the body is of a fine golden yellow, each feather being tipped with black. The head is black and white. I have seen this bird for sale in the Tientsin markets, stripped, of course, of the fine tail feathers, which are highly valued as plumes for a certain warrior character in Chinese theatricals.

In South and West China occur two very handsome pheasants which, however, can not be included in the true pheasant class. These are the golden pheasant (*Crysolophus pictus*) and Lady Amherst's pheasant (*C. amherstiae*). These superbly plumaged birds are distinguished by the possession of large brightly marked hoods, which look like capes hanging down from their necks. They also have very long, broad and well marked tails. So bright are their colours that they look almost artificial.

Another class of pheasants are those which are included in the genus *Pucrasia*, to which belong the pucras pheasants, or koklass. These are about the size of the common pheasant, perhaps a little smaller, and are characterized by having short wedge-shaped tails, and long crests; while the feathers of their backs and necks are long and pointed like those on the neck of the common fowl. They are not brilliantly marked birds, being about the least conspicuous of the



THE CHINESE PHEASANT (*Phasianus kingi*).



THE SHANSI PHEASANT (*Phasianus* sp.).

whole pheasant family. They are excellent eating, and grow very fat. They range from the Himalayas to the Manchurian forests, and include about eight species. Birds from Manchuria find their way into the Tientsin markets. The three species found in China are, *Pucrasia darwini* from Eastern China, *P. xanthospila* from Western China, and *P. styani* from the region of the Yang-tze.

In Manchuria the pucas pheasants are very common. During the colder months of the year they collect in bouquets of ten to fifteen but, owing to the dense forests they frequent, do not offer very good sport. Their Chinese name in Manchuria is Hsu Chi (Tree hen), or Sung Chi (Pine hen).

An interesting group of pheasants is formed by the blood pheasants of West China. Three species have been described from China. One, *Ithagenes sinensis* is found in the Ching-ling Mountains of South Shensi. Not unlike the pucas pheasant, but with softer feathers, this bird has a grey crest, neck and back, green flanks, carmine belly and red legs. The second species, *I. geoffroyi*, is abundant in Western Szechuan, along the Thibetan border. The third species, *I. wilsoni* also occurs in Szechuan, but more to the south.

Last, but not least, come the eared-pheasants, of which there are two distinct species. One of these, the Manchurian eared-pheasant (*Crossoptilon mantchuricum*) is found from Western Shansi, throughout the high mountainous regions of North Chihli into Manchuria. This species has a black head, black neck, breast, shoulders and wings. The back, the upper tail coverts and the anterior portion of the large and handsomely curved tail are grey-white. The throat is pure white, white feathers extending on either side of the head into long ear-like tufts, giving the bird a ferocious appearance. The face is naked and red, as in the common pheasant, the beak is horn-coloured and the legs are carmine. In size this pheasant equals a small turkey, weighing about 7 lbs. Altogether it is a very striking bird. As a sporting bird it has few equals; as an addition to the cuisine none.

In Kansu, and westward into Thibet this species is replaced by another form (*C. auritum*), which includes three local races, or sub-species (*C. a. harmani*, *C. a. leucurum* and *C. a. tibetanum*). By some these local races are considered as distinct species, by others mere varieties of one species; but as we are not concerned with the quarrels of the learned, so long as they ultimately give us some names, whereby to distinguish the numerous varieties of animals and birds, we will leave the matter with them, contenting ourselves by noticing that a difference in plumage does exist.

C. auritum is of a fine slate-blue colour with no white, except on the throat and ear-tufts, while *C. a. tibetanum* is white all over except for the top of the head, which is black, the wings, which are brown and the tail which is black with a metallic sheen.

Eared-pheasants are only to be found in high mountainous and heavily wooded regions. They are essentially birds of the forest, and are very fast runners. Though not strong on the wing, they afford good sport by their peculiar habit of soaring, or, to use more up to date language, vol-planing from the crest of the high ridges, on which they live, down or across the intervening valleys. Being heavy birds they soon get up a terrific momentum, so that their speed exceeds that of the common pheasant. Unless they escape out at the bottom of the valley, or cross the ridge into the next, they will repeat the soaring manœuvre over and over again, so that a sportsman, standing at the bottom of the valley, gets a series of shots that will test his skill and judgement to the uttermost, and he will be a proud man if he returns to camp with four or five of these handsome birds.

To return to the Chinese pheasant, (which I will mention hereafter as the pheasant), there are no really good coverts within easy reach of Tientsin. The hills north of Peking annually yield a few brace to some ardent sportsmen, who do not mind stiff climbing.

The most accessible pheasant grounds are, however, down the Tsin-Pu line, at the various stations beyond Peng-pu and further south round Nanking. Of course these grounds were quite inaccessible till the railway was opened, and even now they are only practicable when the weekly express is running.

Other districts within two or three day's journey are, the valleys east of Mukden and Kai-yuan in Manchuria, the hinterland from Antung in North Korea and South Manchuria, South Shansi and North Honan, accessible from the Pei-han line by means of the Pekin Syndicate line and the Pienlo, East Shansi accessible from the Chen-tai line by getting off at Ping-tan, the station for Ping-ting Chou, and West Shansi, accessible from Tai-yuan Fu, the terminus of the same line.

In any of these places good bags may be made, but for sheer numbers of pheasants no country can compare with the sparsely populated loess districts of North-central Shensi from Yen-an Fu to Pei-tung-kuan, and one or two uninhabited areas in Eastern Kansu. Here the birds are so thick, that shooting them practically ceases to be a sport. To begin with they are so tame that it is almost impossible to get them to fly, and it is not till one has been in the district some time and frightened them a bit that they will offer decent shots.

It is almost unbelievable the number of birds that may be seen feeding in the open fields along the roadside during a days march; but there are at least a dozen foreigners, who will bear me out in my statements. On my first visit in the winter of 1907, the pheasants swarmed, so that I could knock them down with my whip as I rode past. On my second visit during the Clark Expedition, four foreigners and a couple of dozen Chinese lived upon pheasants for over two months, no other meat being available, except an occasional duck and venison once or twice. We shot over the thorn scrub coverts within sight of the walls of Yen-an Fu to our hearts content, and when we left the birds were as numerous as ever. But it was during my last visit in the winter of 1911-12 that their numbers surpassed anything I had ever dreamed of, as they swarmed, literally in hundreds, along the roadside. The crops, owing to the Revolution, had not been gathered in that autumn, and this seemed to attract unusually large numbers of birds out of the hills on to the wide valleys. The members of the Shensi Relief Expedition shot pheasants till they were tired of the sport, and still the birds refused even to take cover. Had we the ammunition, there would have been no difficulty in bagging two or three hundred birds a day, and these conditions existed over a stretch of country that took five days to traverse, going at a good rate. I knew, too, from previous journeys that the same conditions probably extended eastward across the Yellow River into Shansi, and westward nine or ten days' march into Kansu.

In China the most satisfactory, one might almost say the only way to shoot pheasants is by walking them up, over dogs if possible. There is no need for driving, and I am glad to say that out here, at least, we have none of the indiscriminate-slaughter kind of sportsmen, who, detesting any kind of hard work, refuse to go after their game, and whose main object is to kill as many birds as possible, with the least exertion, and in the minimum space of time.

Almost everywhere in China pheasant shooting entails a fair amount of walking and hill climbing, but how handsomely one may be repaid for his labour the following anecdotes may serve to show.

Some twelve miles to the west of Tai-yuan Fu in Shansi, lies a little hamlet named Sheng-yieh, situated at the head of a ravine in some well wooded and mountainous country. Adjoining the hamlet is a small temple, one room of which has been repaired, and made suitable for habitation by a public spirited resident of Tai-yuan Fu. It has long been the custom for the shooting members of the community to spend their shorter holidays shooting in the district. The mountains, which rise rather abruptly from the plain, are formed of sedimentary

rocks, layers of mauve, maroon, yellow and green shale, interbedded with coal seams, overlying heavy masses of blue limestone. Woods of pine, spruce, birch and poplar stretch along many of the ridges, while, elsewhere thick hazel scrub, dwarf oak or thorn brush afford good cover. These patches of vegetation are interspersed with stretches of bare crumbling rock, or once cultivated terraces, upon which thick, rank grass and brambles grow in profusion. So wild is the spot, one can completely forget that within half a day's march lies a great city, so that it fulfils one of the chief requirements of a holiday resort.

It came about one fine afternoon early in the autumn season, that three of us found ourselves riding westward with the hopes of enjoying a restful change in a few days sport mid these delightful surroundings. Arrived at the temple, we made ourselves comfortable, and early next morning commenced our shooting. We found the pheasants reasonably plentiful, and enjoyed ourselves thoroughly. Amongst other things a small flock of eared-pheasants was raised, from which I succeeded in bagging a fine cock. Several woodcock were flushed, and one or two brought to bag, while hares, after the first two or three that got up had been potted, were ignored as being unworthy of further notice. One of our party was a Frenchman, a tolerably good shot, and a most amusing fellow. He put up a small pig towards the end of the day, and was much annoyed when we told him he had only seen an unusually large hare. Our chaff, however, brought woe in its train, for two days later, when a really magnificent boar jumped up in front of our friend, so determined was he that we should see it for ourselves, that he stood calling to us instead of shooting, and the tusker escaped over the nearest ridge.

For several days we ranged the woods and pine spinnies, the dense valley bottoms, or the higher rocky ridges. Most of the time we carried rifles in the hopes of getting a pig or deer, but finally on our last day we decided to devote our energies entirely to pheasants and other small game.

By this time we knew exactly where all the best coverts were, and so, as dawn broke, lost no time in getting to work. Our first beat flushed a bouquet of some thirty or forty birds, from which we bagged five, the two Britishers making a right and left each, while the Frenchman secured a good cock. Our friend was not to be despised, however, for he drew level and passed us in the next beat, when four more birds were added to the bag. We were now at the end of a long rocky ridge. In front and below us lay the bare loess foothills, while behind us stretched a long pine wood. On either side were scrub-filled ravines,

Plate XIX.



F. W. WARRINGTON AND A MANCHURIAN EARED-
PHEASANT SHOT NEAR TAI-YUAN FU, SHANSI.

and we decided to cross one of these. In descending the slope several pheasants were put up, but escaped, as also did a couple of woodcocks.

When half way up the opposite slope, we commenced working over some long-deserted terraces, and here we had the best sport of the day. The scrub was just thick enough to shelter the birds, and not so thick as to impede our progress. We did good shooting, finally reaching the head of the valley with another ten birds between us. Crossing the ridge at the top, we descended a second ravine, and again found ourselves in the thick of it. Birds were getting up all round, and it was only the approach of twilight, as the sun dipped behind the ridges, that caused a falling off in our marksmanship. Three hares, breaking cover, were easily secured, however, and a large covey of partridges also supplied a couple of birds to the bag. When we finally stopped shooting, and headed for camp in the fast gathering gloom, we carried with us the respectable bag of twenty-five pheasants, three hares and two partridges. These added to our other bags, brought our total up to about seventy head.

Last Chinese New Year a shooting party from Tientsin, which I was kindly invited to join, had a very enjoyable week on the Tsin-pu line. Stopping off at the San-chieh station (about one hours run from Pu-kou) we shot over the surrounding hills with fair success for three days. Considering that the district had been worked pretty continuously since the previous autumn, and that the Station Master himself had shipped four piculs of pheasants a day for a fortnight to the Shanghai markets, pheasants were surprisingly numerous. There were a great many quail; in fact the quail shooting was liable to prove upsetting to the nobler sport, but at least one never lacked something to shoot at. Hares, also were quite plentiful, while waterdeer might be put up at any moment from the reeds that fringed the streams along the valley bottoms. At the heads of the valley, where the natives had made small reservoirs to keep up a supply of water for their paddy fields, large flocks of duck might be had.

The hills were low, and, except where the scrub had been burnt away, afforded good cover. Our best day was when we beat through the country half way between San-chieh and the next station southward. We commenced by driving through some scrub-oak to the east of the railway, where a couple of birds were bagged. Next, after crossing some rather bare hills, we suddenly came upon a large bouquet of handsome cocks, out of which four were secured, before the last bird disappeared over the ridge. Continuing, a couple of hares and some quail were potted as we crossed a valley. We had now worked back to the railway line, crossing which we traversed a wide valley. In

doing so we got rather scattered. My companions worked up the valley, and I could hear their guns every now and again. Just as I reached the stream, I caught a glimpse of a water deer, scrambling round a corner of the bank. It got away, however, before I could draw on it. Turning down stream, I walked for some time through very pretty cover, picking up a quail here and there, and securing another brace of pheasants.

Finally I worked back to the railway, where the lunch-basket coolies were waiting. One of these said he could show me where a deer was, so off I went with him. Sure enough, within a couple of hundred yards, we put up my water deer again out of some reeds. My first barrel of fours only got its body, and it continued as if unhurt, but my second, taking it in the head, brought it down with a thud.

Soon my companions arrived at the place of rendezvous, and we counted the bag. It contained about six brace of pheasants, two hares, one water deer and about fifteen quail. Our bags, we were told by a local sportsman, were nothing compared with those which had been made in the same locality earlier in the season, but we were all pleased enough, and two days later boarded the up bound train, feeling that the week had not been wasted, and promising ourselves another such outing, come next Chinese New Year.

CHAPTER XIV.

PARTRIDGES.

PARTRIDGES like the quail, the peacock, the guinea-fowl and the turkey belong to the great pheasant family, *Phasianidae*. It is remarkable with how great a variety of game birds we are supplied by this family, the members of which differ from the grouse in the legs being naked and armed usually with spurs.

The *Phasianidae* are again divided into three sub-families, namely, the *Phasianinae*, which includes the pheasants (as dealt with in a previous paper), *Perdicinae*, which includes the Old World partridges and quails, and *Odontophorinae*, including the American partridges and quails.

With the first we have already dealt, while the last need not concern us for the present. This paper deals only with a few members of the second, *Perdicinae*, though in passing it may be mentioned that the last two sub-families include over one hundred and fifty distinct species.

The main characteristics of the partridges are (1) that in the wing the tenth flight feather is shorter than the first, and (2) that the tail is shorter than the wing. It will be seen on examination that the quails come in this group, but I shall not deal with them in this paper, confining my remarks to the two genera *Perdix* and *Caccabis*.

The genus *Perdix* is represented in Great Britain by the grey partridge (*Perdix cinerea*), so familiar to all, and in China by two species, the bearded partridge (*P. daurica*) and the Kansu partridge (*P. sifanicus*). A fourth species, *P. hodgsoni*, is found in Southern Thibet. These four species represent what may be called the true partridges, the first two having eighteen tail feathers and the last two only sixteen.

The form common to most parts of China is the bearded partridge. (*P. daurica*), which very closely resembles the British common or grey partridge, (*P. cinerea*). It is, however, more yellow in colour, and is remarkable for its very distinct beard of long feathers, depending from the throat. In size it about equals the grey partridge, though

it differs somewhat in its habits and haunts. It ranges all over North China, across Mongolia into Siberia.

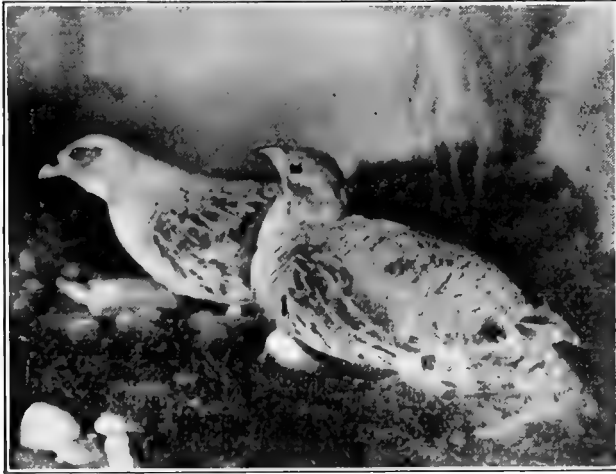
This bird inhabits all kinds of country. Coveys may be flushed in the thick patches of sage brush on the open plains or away up on the long, grassy slopes of the highest mountains up to an altitude of 9,000 or 10,000 feet. Unlike the chukar, it is perfectly silent, and, at the first sign of danger, crouches down and lies very close. I have sat for an hour within a few feet of a covey of these birds, which only broke cover when I rose abruptly to go. *Perdix sifanicus* inhabits Southern Kansu.

In South China the partridge is replaced by the francolin. (*Franco-linus chinensis*) a bird included in the same sub-family, but differing from the true partridges in having one or more pairs of well developed spurs.

The red-legged partridges or chukars, which form the genus *Caccabis*, differ very markedly from the members of the genus *Perdix*. They are larger, and more strikingly coloured, and have very different habits. They are mainly characterized by their conspicuous transversely barred sides, a cream patch on the throat, edged with black, and their red legs and beaks. The rest of their plumage is of a mauve-grey, shading into light blue-grey on the breast, and buff under the tails. The tail feathers, which number fourteen are of a bright brick-red colour.

There are several species in this genus. The representative in Great Britain is known as the French partridge (*Caccabis rufa*), while the form common to China is the chukar (*Caccabis chukar*), which ranges from the Grecian Islands right across Asia into North-eastern China.

The chukar is essentially a bird of wild, rocky districts, though in Shansi, Shensi and Kansu it also makes its home in the loess hills, frequenting the deep ravines and gullies. From September till March it may be found in great coveys, sometimes containing as many as forty birds. Though, owing to its protective colouring, it is extremely difficult to detect in its natural surroundings, the chukar has a foolish habit of cackling, thus betraying its whereabouts to the hunter. In districts where it is plentiful its aggressive cackle may be heard on all sides, when a careful survey will usually reveal several rival cock birds perched upon prominent rocks and spurs, giving full vent to their feelings over the presence of an intruder. This characteristic call may be rendered by the three syllables "*Gua ke ke*" repeated rapidly five or six times.



THE BEARDED PARTRIDGE (*Perdix dauvica*).



THE CHUKAR (*Caccabis chukar*).

In cultivated areas the chukar feeds upon gleanings from the fields, but in wilder parts it lives upon mosses, lichens, berries and the tender shoots of young plants.

It occurs wherever there are hills or mountains, though it does not seem to care for altitudes over 8,000 feet. It is had country indeed where the chukar is not to be found.

The eggs are laid in May, and in July the mothers may be seen with their broods of ten or a dozen tiny chicks. The latter can fly in August and by September are fully fledged, when as already stated they gather into large coveys.

Throughout the winter these birds are in excellent condition, forming a valuable contribution to the menu. A full grown male is about the size of a hen pheasant. The Chinese name is Shih chi (Stone fowl).

In China partridge shooting does not hold the place that it does in Great Britain. The reason for this is chiefly that there is very little of the right kind of cover, except in out of the way hilly or mountainous districts. Cultivation in China differs very markedly from that at home. The farmers spend a great deal more time in their fields, usually raise two crops a year, and, unlike farmers at home, gather in every stalk and blade of vegetation before the winter comes on. All this is not calculated to encourage the partridges to leave their safe home in the hills, and it is only when driven by hunger during a specially cold winter that they will do so. Then, too, as already shown the birds themselves differ considerably from those in Europe. The chukar keeps to the steep loess hills and ravines, or precipitous rocky ridges, while the bearded partridge is only plentiful on the open slopes of the very high mountain ranges.

Thus he who wishes to indulge in partridge shooting must be prepared to travel far and, owing to the nature of the country inhabited by these birds, must be prepared to work hard. As a matter of fact it is seldom that those, even, who live within easy reach of partridge coverts go out specially for them, preferring rather to take them as the chance offers when out after more profitable quarry.

Still one can recall several occasions when partridges formed the main item during a days shoot, and as they were typical of what the sport is like in this country they may be recounted.

One such day, especially, stands out in my memory. It was in the early spring of 1910, when my wife and I were returning from a winter's work in the mountains of Western Shansi. We had just left behind some magnificent forest country, and were travelling down

the wide valley of the Fen River. Chancing to look down from my pony, I saw a large covey of bearded partridges, which had just left the hill side to pick up grain from the road and stubble patches. They saw me at the same time, and commenced running for the scrub covered slopes. I nipped off my pony, and walked towards the birds, which now rose with a whirr of wings. I bagged three with my two barrels, the rest making good their escape up a side ravine. Guessing that it would be a good day for partridges, I got my wife to join me, and together we walked along the side of the valley. Covey after covey got up, each yielding a bird or two. We could have got more out of each covey if we had cared to climb the hill sides, but the sport was quite good enough as it was. The peculiar thing on this particular day was that the bearded partridges and chukars were associating together. Notably was this the case in a small side ravine where we had really excellent sport. A large covey got up from some graves and entered the ravine, into which I followed them. Suddenly from all round me they broke cover, and I was kept busy shooting and reloading as fast as I could. Meanwhile my wife was at the mouth of the ravine taking, or trying to take those birds that came whirring out. She succeeded in dropping a couple, which was pretty good work, considering the rate they were going at. I got five before the last crossed the top of the ravine, and then continued to follow them up. Once more putting them up in the next ravine, I secured another couple. After that we gave up shooting, and hurried on to our destination. Altogether we got fifteen partridges, one hare and about twenty rock-doves that day.

About twenty miles east of Tai-yuan Fu, there is a village, tucked up against the side of some rather high hills. It is known as Ta-yeh-k'ou, and has long been famous to the foreign residents in the city as being the best chukar ground in the district. Many a time have I come down from the holiday resort further back in the hills to the loess terraces just behind this village, and bagged four or five birds in the course of an hour or so. The only reason why a person, working alone as I was, does not get a larger bag, is that the chukars, after the first shot or two, always cross the deep ravines to the opposite slope, so that a long climb is necessary to come up with them again. When, however, a party of four or five guns works over such a piece of country, very handsome bags may be made.

One such party, including six guns returned from a week end trip with some fifty head, the sportsman who had done best having to his credit twenty birds. The actual time of shooting on that occa-

sion was an hour on the Saturday evening, and from dawn till noon on the Sunday, the rest of the time being occupied in getting to and from the grounds.

When shooting chukar, one must mark down a wounded bird very carefully, or it will be lost. Many very remarkable disappearances have occurred. Once, having winged a bird, and, owing to shortage of ammunition, not wishing to expend another cartridge on it, I gave chase. The bird kept just out of reach, so finally I took my eyes off it as I stooped to pick up a stone. When I looked up the bird was gone. It was on a bare hillside with next to no cover, yet that bird had vanished as completely as if it had been swallowed up in the earth. I went over the whole slope, foot by foot, but never found my bird.

On another occasion I dropped one into a ravine, and, though I carefully marked the spot where it fell before descending, it took me half an hour to find it. It had posed itself beside a rock and looked so exactly like a stone that I passed and repassed it several times.

The best sport may be had with these birds by using a dog, when also one is not so likely to lose those brought down.

Localities accessible to Tientsin sportsmen are not very numerous. The whole of Shansi and the provinces westward form good chukar grounds, as also do all the mountainous districts of Chihli. Very good chukar shooting may be had round Kalgan, and I believe there are a few birds on the hills at Tong-ku. Peking sportsmen often get them in the hills at Nankou.

CHAPTER XV.

THE QUAIL.

QUAILS are the smallest of all game birds, though whether they are the least sporting is quite another question.

They belong to the genus *Coturnix*, which in turn is included in the partridge sub-family of the pheasant family, and are characterized by having the most extreme form of the partridge type of wing, which means that the first flight feather is almost as long as the second and very much longer than the tenth. Otherwise they are distinguishable by their very much smaller size.

In all there are not more than about three species of *Coturnix*, though there are a few closely related forms.

The common, or migratory quail (*Coturnix communis*) has a very wide range indeed, being found all over Europe, in North Africa and in Asia north of the Himalayas. Though it enters China, while on its migrations, it is not the real inhabitant of this country. The quail generally seen out here is the Japanese quail (*Coturnix japonica*). The only other member of this genus is *Coturnix capensis* found in South Africa. Both of these two latter species interbreed with the migratory quail.

Locally we have another bird, which is very like the quail, and which, from a sporting point of view might be classed with it. I refer to the bustard-quail (*Turnix*). The local birds belong to the species *T. blanfordi*. They are about the size of the Japanese quail, but their plumage differs considerably. In general colour the two species are not unlike one another, except that the male of the bustard-quail is lighter and more reddish than either the male or female of the Japanese quail, while the female of the former is very much darker and more inclined to greyness than in either sex of the latter. The chief difference in the plumage lies in the markings, which take the form of longitudinal streaks and transverse bars in the Japanese quail, while the feathers of the bustard-quail are marked with large round dots of black. The beak of the latter is longer than that of the former, but the most marked difference in the two species is the entire absence of the hind toe in the bustard-quail. Another peculiarity in the last mentioned species is that the female is larger and more richly



THE MANCHURIAN EARED-PHEASANT
(*Crossoptilon manchuricum*).



THE BAIKAL OR SPECTACLED TEAL (*Querquedula formosa*).

coloured than the male. This feature also occurs in the case of the painted snipe, and it is a fact that the bustard-quails form a connecting link between the pheasants and the rails, just as the painted snipe is intermediate between the rails and the true snipe. The quails in India all belong to the bustard-quail type. The local species inhabits the long sedgegrass in and round marshy districts, and not infrequently offers a shot when one is out after snipe.

Quail shooting as a sport reaches its height in North Africa, where the sportsmen annually await the vernal and autumnal migrations with impatience. During these seasons enormous bags are made. In Great Britain very little is done in this line, though, I believe, an attempt is being made to encourage the quail to breed in districts where other game will not thrive.

As a matter of fact very good sport can be had from quail, though shooting them is not nearly so difficult as is the case with most other birds.

In China, where quails are plentiful, one can soon get very keen; though where they mix with pheasants and other game birds, their scent is so attractive to hounds, and they offer such tempting marks as they rise and skim over the tops of the bushes, that they are apt to spoil more serious sport.

Quails are prevalent all over North China, where there is flat open country. They do not frequent hilly country except where the hills are low and rolling. In Shansi they are very numerous in the wide river-valleys. On the Tai-yuan Fu plain I have often had very good sport, though I have never made big bags. There they are very useful in filling up gaps in mixed bags. As one walks through the sage brush, tall grass and bean patches looking for hare and partridges, one is frequently startled by a whirr of tiny wings as a quail rises from one's very feet. At the report of the ensuing shot a second bird almost invariably gets up, offering another good chance.

In the winter of 1911, on our ride into Shensi, we found them very numerous along the road side, a day's journey south west of Tai-yuan Fu. Those of my companions who had shotguns had excellent sport, as my pointer worked backward and forward in the long sedge-grass, putting up bird after bird. Some dozen birds were secured thus in less than half an hour, all the time that could be spared.

While camping on the banks of the Fen Ho in the same district, I invariably had good sport with quails, while visiting my traps, usually bringing home two or three brace. Here they would get up from bare fields, or where the merest whisp of cover lay.

Quail may be found round Tientsin, though they are not over abundant. I believe the best place for them is behind the Russian Concession. They are fairly plentiful round Shan-hai-kuan, from, and, beyond which place most of the birds sold in the local markets come.

As mentioned in my paper on pheasants we found them very plentiful last winter in Anhui, along the southern section of the Tsing-pu line, which district is certainly the best quail ground I have yet encountered. Here they may be found in the shallow valleys, and also upon the low hills, though they seemed most plentiful in the long grass immediately bordering on the streams. It was an almost invariable rule, that the birds were in pairs, one usually getting up after its mate had been flushed and shot at. These birds were of a good size and very plump. During the week that we were in the district fifty quail were bagged, and it must be understood that we only shot quail when there was nothing else in view. Dozens of birds were allowed to go unmolested lest pheasants should be put up out of range. Ten to fifteen brace could easily be bagged a day in this locality, if a man were to give his attention to it.

In shooting quail it should be remembered that their flight is very much slower than it appears to be. Also their course is not erratic, like that of the snipe, nor are they on the rise. After the first spring into the air they keep pretty level, and if undisturbed will soon light again. They should be allowed to get a fair distance before one pulls on them, and if one is without a retriever, should be marked down at once. Otherwise they are liable to be lost, their protective colouring making them very difficult to find.

A quail that has once risen is very hard to flush a second time without a dog. This is due to the fact that they run as soon as they light, and one is apt to beat about in the wrong direction. As a rule it is as well not to waste time in such cases, but to walk straight on till another bird gets up.

In India the quail (bustard-quail) is chased on horse back. When a bird gets up the riders pursue it at top speed. It out-distances them and alights, but is soon put up again. Each time its flight is shortened till at last it refuses to fly, when a careful search will reveal it crouching on the ground. It may then be taken by hand.

Quails are charming little birds to have in an aviary, and very soon become tame. Being ground birds they keep to the bottom of the cage and do not interfere in any way with the other inmates. They are very easy to keep. The Chinese use them for fighting, pitting one cock against another, and betting on the result. The birds display a considerable degree of pugnacity in these encounters.

CHAPTER XVI.

THE BUSTARD.

PERHAPS the finest of all game birds are the bustards, several very large species of which occur in different parts of the world. The larger kinds may well be classed as big game, for apart from their magnificent appearance, they offer splendid sport, especially in a flat country where they are plentiful. Birds of a fine species inhabit, during the winter months, many a broad valley and plain, such as those on which the capitals of Shansi and Shensi lie. Here they feed in large flocks, often numbering twenty or thirty head. A particularly fine stretch of country for them lies to the north west of the chain of high mountains that runs from Ning-wu Fu in Shansi down the western part of that province past Tai-yuan Fu and Fenchow Fu. Here the country is undulating, and consists of low grassy hills and cultivated fields, and in a day's ride one may see ten or a dozen flocks without straying far from the road.

The open nature of the country on which it is found, together with the keen sight of the bustard make it a very difficult bird to approach. Its great height enables it to overlook many of the small banks and ridges of earth that mark the boundaries of the fields, and even if the sportsman succeeds in approaching his quarry under cover of some water-course or sunken road, the moment he shows himself to take aim, the watchful birds spy him, and take to their wings.

To attempt hunting bustards on foot is almost useless, besides being exceedingly tiring; for unless one is in country where they are particularly plentiful one often has to cover a large tract before even seeing the game. Another thing is that they suspect any person on foot of mischievous intent far more readily than they do a man on horse back.

For bustard hunting I would advise the use of a rifle in preference to a shot gun, as one seldom gets near enough to make the latter weapon effective. However, with a little luck one can sometimes bring down

a bird or too with the shot gun, by charging on horse back at racing speed into a flock, taking flying shots as they get under weigh.

Armed with a good rifle or carbine, mounted on a strong but quiet China pony, and accompanied by an attendant, also well mounted, one is ready for the chase. Some previous knowledge of the favourite spots of the local birds is necessary. Sandy river beds and the cultivated fields bordering them are generally worth exploring. By keeping the ponies at a comfortable trot one can cover a lot of country in a remarkably short time, and can at the same time keep a sharp look out for any sign of the quarry. If possible ride with the back to the sun, in which case the sunny side of the bustard is presented to the hunter, and the white of the wing and breast can be seen at a great distance. If the shady side is presented to the sportsman, he will often fail to see the birds till they have become alarmed at his approach, and take to their wings.

Having sighted the birds, the sportsman should halt and take a careful survey of the surrounding ground, looking out for irrigation canals or any other cover. If there is none the best thing for him to do is to make a big circuit round the bustards, gradually drawing nearer till within range. Then, handing the reins of his pony to the attendant, and slipping out of the saddle on the side away from the flock, he should allow the man to ride on with the horses, who should at once begin to edge away. This device deceives the wary birds, whose united gaze is concentrated on the horses. It fools them into the belief that they are not going to be molested, and, if the dismounting has been neatly done without any commotion, and the hunter has dropped flat on his belly, the bustards will not notice him and will resume their feeding. He can then carefully select his bird and take his time about aiming. Needless to say, accurate shooting is very necessary, for the vulnerable area of the bustard is far less than the mark presented. It is almost useless trying to get a second bird out of the same flock on the same day; indeed it is difficult to get a second shot if the first fails. For my part I feel very satisfied if I return at the end of the day with a single bird hanging from my saddle, for bustard shooting is one of the most difficult of sports.

If the birds take to their wings before one has had time to fire, one should get to horse with all speed and follow them, not being discouraged if they seem to vanish over the horizon. A bird in the air is a most deceptive thing and it looks a great deal farther off than it really is. Many times I have watched a flock of bustards fly out of sight and then, jumping upon my pony, have come upon them within a mile or so.

Perhaps the recounting of a few experiences would serve better to give the reader some idea of bustard hunting than the above general statements.

Never shall I forget my first bustard. I was travelling in Shensi at the time and we were nearing Si-an Fu. My companion had had the misfortune to sprain his ankle severely some days before, and was obliged to keep to the saddle, so that when we reached some flat country where bustards were plentiful, it fell to my lot to secure one for the pot. Several times I tried stalking the wary birds, but without success. Once I managed to get within twenty yards of a flock, but, though I emptied both barrels of my shotgun into the nearest bird, I could not bring it down.

We then resorted to the method I have just described. My companion took the reins of my pony and we described a circle round a large flock, slowly drawing nearer till within about one hundred and fifty yards. At this point we passed behind some graves. I seized the opportunity to slip off my pony, and, with the graves between me and the birds, managed to get a few yards nearer. Then, resting my rifle on the top of a grave, I fired, and was delighted to see a bird collapse in a heap. My delight was somewhat lessened, when I found that I had hit the bird in the head, which was some ten or twelve inches higher than I had aimed. Still the bird was there and it tasted well when roasted.

A year later I successfully performed the same feat, this time accompanied by my wife. We were travelling over the flat country west of Ning-wu Fu in Shansi. All day we had been trying to get within range of some bustards, but each time had met with failure. Once I managed to sneak up a little watercourse to within range, but before I could take aim the birds began to fly off. Another time I was creeping along the ground towards a flock, when two Chinese with a donkey came in the opposite direction, and when I rose to my knees to take aim the birds had gone and in their place were two grinning asses—and one sober one. My feelings on that occasion can better be imagined than described. Once again I was approaching a flock, when a native came blundering along, upsetting my calculations, so that I only knocked the tail off my bird as it rose. This last flock flew over a low ridge and we followed it in the hope that the bird I had hit might be more severely wounded than we supposed. We failed to find that flock again, but just as we were about to return to the road to continue our journey, my eye caught a gleam of light about half a mile away on a gentle slope. We turned our ponies in that direction and soon found my conjectures to be correct. Six or seven magnificent birds

were quietly feeding in a ploughed field. We rode as if to pass them, and, when within about one hundred yards of them, I slipped out of my saddle, and crouched low. My wife rode on leading my pony, while I covered a couple of birds that stood close together. Slowly advancing I kept my rifle sight on the birds, and just as they spread their wings to fly, fired and brought one down. It was a beautiful bird weighing a little over 18½ lbs.

The following day we tried the same experiment several times without success. The ponies were too fresh and restive, and would not allow me to dismount without capering about, so that the birds took alarm each time. Two days later I secured another 18 pounder and then two others weighing 17½ lbs. and 14 lbs. respectively.

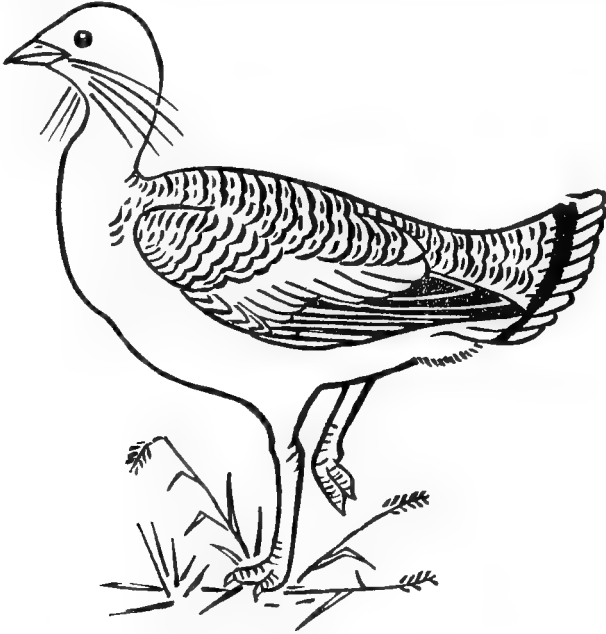
A bit of stalking that gave me particular satisfaction at the time and still does as I call it to mind was brought off on the Tai-yuan Fu plain. Two of us were out after hares, and as we drove through the sage brush a flock of bustards was seen coming in the opposite direction. The birds flew past us, and settled about a quarter of a mile away on a sandy flat near the river. My servant was with me carrying my rifle, so I decided to attempt a shot. I was able to make about a hundred yards on foot owing to a slight depression in the ground, but from there on I was forced to creep on my hands and knees through the under brush, which was, by the way, far from thick. It was tiring work, but at last I reached the spot, from which I had hoped to take my shot. The bustards had, however, flown another hundred yards up the river so I was forced to continue on hands and knees still further. A bare field in front of me made it necessary to make a rather long detour in order to escape observation, but at last I got within range, and could just see one bird between the bushes ahead of me. After a few moments rest I took a long and careful aim, bringing down my bird with a shot right through the body.

Once again while out after geese on the Si-an Fu plain in Shensi I came upon a couple of bustards. I was alone, and there was absolutely no cover, so hobbling my pony, I advanced upon the birds. They walked away from me, but did not attempt to fly and at last I was within sixty yards of the larger, when I managed to shoot it through the body. It rose into the air, and flew some three hundred yards, before it came heavily to the ground, and lay dead.

It will thus be seen that with bustards, as with most other game, one can not work entirely by rule, but must depend upon the circumstances of each case and one's own judgment to decide how to proceed.

The Chinese distinguish two kinds of bustards in North China. One is a large bird weighing anything from fifteen to twenty pounds. It is

characterized by the tail feathers being brown and white, tipped with black, and it is seldom seen in flocks consisting of more than five or six individuals.



THE BUSTARD (*Otis dybowskii*).

This is referable to the species *Otis dybowskii*. It is very much like the great bustard (*O. tarda*). One I saw weighed 28 lbs. They very frequently weigh from 15 lbs. to 20 lbs. The Chinese call this bird "Yang-pu" (Sheep bustard) as opposed to the smaller "Chi-pu" (Hen bustard). The latter is not really distinct, being nothing more than the females or young males of the former.

The Chinese hunt the bustard by digging pits in the ground, and setting out decoys. They will sit patiently in these pits day after day, and feel repaid for their labour if they secure two or three birds a week. The decoys are made from the skins of bustards, which are stuffed with straw and stuck upon sticks. The life-like nature of these dummies once gave rise to an amusing incident, which befell a party of us, while out shooting on the Tai-yuan Fu plain.

We had been after geese all the morning, and had not done badly, so that, when three bustards were sighted, we hailed the idea of a bustard each as a welcome change. Accordingly we dismounted from our ponies, and began a long and careful stalk. One of our party was

armed with a .22 repeating Winchester rifle, and we decided that, when within range, he should fire first, while the other two of us should take the remaining birds as they rose. At last, after toiling over the muddy ground in the broiling sun, we were within range, and our friend of the rifle took careful aim and fired. Nothing happened so he fired again. Next moment a face appeared over the edge of a low ridge, and a voice asked, in amused tones, what we were doing. It was not till then that we discovered that we had been stalking some decoys. That time the laugh was with the Chinaman.

Allied to the bustard, almost as good eating and quite as difficult to shoot, is the edible crane. In some places this bird is very numerous, and can be hunted in the same way as the bustard.

One of the most delightful spots for birds that I have come across in my wanderings was some flat grassy country situated near the southern border of the Ordos. For miles around the country was an arid sandy desert, but here, where a few marshy lakes existed, the flats were dotted over with huge flocks of cranes and bustards, geese wandered in pairs in every direction, while the surface of the water was alive with thousands of ducks, whose wings made a noise like thunder as they rose at our approach. Plovers, curlews and other waders filled the air with their plaintive calls. Unfortunately we had a long way to go that day, so that we could not spare the time to stop and shoot.

The bustard leaves the warmer plains in the spring and flies northward to the breeding grounds in Northern Mongolia and Siberia, so that it can only be hunted during the colder months.

CHAPTER XVII.

WILD GEESSE.

TOWARDS the end of February or early in March, when the north bound sun begins to thaw the ice and snow of winter, with it come the first few bands of geese, the advance guard, as it were, of a mighty host. Later, when the spring freshets, coming down from the mountains with irresistible force, burst up the yielding ice, and, grinding the great slabs into fragments, send them whirling and crashing down the river, till they vanish in the angry floods of the flat lands, then come the honking battalions of the main army. Immense chains of geese pass ever northward: huge flocks in serried ranks feed on the fields of young wheat; while the sandy flats at noon are black with their countless numbers.

The heart of the farmer sinks within him as he sees field after field shorn of its emerald coat, but that of the sportsman bounds with joy as the spirit of spring enters his soul, and, seizing his gun, he sallies forth to pit his cunning and skill against those of the cleverest of birds. Who so glad as he, as he tramps over ploughed field and sandy flat early on a fine spring morning, his faculties all alert, planning how best he may come within range of his quarry? His eyes search the plains for irrigation canals wherein he may hide and await the long V-shaped lines that he knows will pass presently over his head. He keeps a sharp look out for dykes, along which he may creep till within range of some unsuspecting flock greedily plucking up the tender blades of wheat.

Whether one uses shot gun or rifle there are few sports that excel that of goose shooting. The size of the game together with the skill and judgment required to bring it down, make the heart of the hunter swell with pride when he returns home after a long day's tramp or ride with a good bag. The experienced hunter seldom returns without three or four geese, while occasionally a cartload has been the boasted bag of an enthusiast in a good piece of country.

There are some eight species of geese known to occur in North China. Of these the bean goose (*Anser sogetum*) and its allies the thick-billed goose (*A. serrirostris*) and the long-billed goose (*A. middendorffi*) are the commonest. These three birds very closely resemble each other. The first is the common goose most frequently shot by sportsmen, and which occurs so plentifully in the local markets in winter. The thick-billed goose may be distinguished by its greater size and its very much thicker bill, while the long-billed goose is distinguishable by its much longer bill. In all three the plumage is almost identical. The grey goose (*A. rubirostris*) is a still larger bird, with a greyer plumage. It may also be recognized by its pinkish legs and beak, the legs of the other three species being of a fine orange, and their beaks black with an orange band.

Next come the white-fronted goose (*A. albifrons*) and the little white-fronted goose (*A. erythropus*), both small birds at once distinguishable by the white patch upon the forehead. These are rather rare in North China, keeping more to the sea coast while on their migrations.

The swan goose (*A. cygnoides*) is another rather rare goose. This is the ancestor of the Chinese domestic goose, and is remarkable for its very long slender neck and fine markings.

Finally the brent goose (*A. nigricans*), which occurs in Japan, must be recorded as a straggler to the Chinese coast. It has been shot at Wei-hai-wei and also in Fuchow. This bird is easily distinguishable from all the foregoing on account of its grey plumage, and black head and neck, marked with white.

The bean goose, so called from its habit of feeding entirely upon grain, is a handsome bird weighing from four to seven pounds. It is seen in North China during the spring and autumn, on its way to and from the breeding grounds in the far north.

While migrating it follows the courses of the larger rivers and is then much hunted by Chinese for the sake of its feathers. The method employed is similar to that used with the bustard, but without the decoys. A deep pit is dug close to the river, and in this the Chinese hunter waits till a flock passes or settles within range, when he tries to bring one down with his long barrelled gun.

No doubt there are some Europeans with a sufficient stock of patience to follow the example of the worthy Celestial, but such sport can appeal to few, whereas pursuing and stalking the goose on foot or on horseback, combining as it does, healthful exercise with the enjoy-



THE BEAN GOOSE (*Anser segetum*).



THE BEAN GOOSE. A SEVEN POUNDER.

ment of shooting, cannot fail to rouse the energetic instincts of members of the white races.

Goose shooting is better enjoyed when shared with two or three congenial companions, besides being greatly facilitated. The party should ride out to the hunting grounds, when the ponies should be left in charge of an intelligent native, who will watch the sportsmen and have the ponies in readiness for immediate use, without interfering with the game.

If the day is not far advanced and the air cool, the geese will be found flying to and fro within easy range from the ground in search of suitable feeding places. They have been flying probably all night, and, being anxious to secure food and rest, will fall an easy prey to the sportsmen, especially if the latter have concealed themselves behind some dyke or other.

This will not last long, however, and it becomes necessary to stalk the geese that have settled in large flocks in every direction on the fields of young wheat. The wily birds always keep a sentinel on guard, generally an old and experienced gander. It is then that the advantage of three or four guns is seen. By the hunters surrounding the geese and slowly advancing upon them, the latter become flustered, not being able to choose in which direction to fly. As they rise they are sure to pass close over one or other of the guns offering an easy mark. This process can be repeated till towards noon, when the geese, having satisfied their hunger, fly down to the nearest river or lake to drink and rest. It is then impossible to approach them, and the sportsmen had better abandon the chase for the day, or wait till late in the afternoon, when the geese once more take to their wings, and prepare to continue their journey northward or southward according to the season.

When geese are particularly shy it becomes necessary to resort to stratagem. A native cart is not feared by them, and by hiring one of these and using it as a cover while the carter drives close to the game, one can often make a bag when most other methods have failed.

In country where geese are plentiful they can often be secured by riding at a dead gallop up to them and shooting into the brown of the flock as the birds rise.

With a rifle one can do very well, for though a single goose presents but a small mark, they crowd so closely together that a well-directed ball seldom fails to knock out a bird. Needless to say this method is too dangerous, except when one is alone.

The Tai-yuan Fu plain is a very good place for goose shooting and I have enjoyed many a day's outing in company with one or another of the foreign residents in that city. We used to ride out to the river and slowly work along its course for eight or ten miles. On one of these expeditions three of us, armed with shot guns and rifles, and having a Peking cart with us, enjoyed particularly good sport. The cart came into play in one place with good effect. A flock was sighted near the river so that we could not surround it, being able to approach from one direction only. There was no cover so we directed the carter to drive as if to pass the flock. This he did while we kept out of sight behind the cart. When in line with the geese we rushed out and let fly, as the startled birds rose, bringing down a bird each. We also brought down several birds as they passed overhead earlier in the day, while later on we successfully stalked a large flock along a dry irrigation ditch. The bag totalled some dozen head that day.

Geese are hard birds to kill, being very tenacious of life. They will often fly for long distances, though severely wounded. When a flock has been fired at, the marksman should always watch it out of sight, and, if he sees one bird leave the rest, he may know that it is wounded, and, following it up, is likely to find it dead in the fields.

As an example of this, take the following incident. I was out hunting with my wife along the Fen Ho near Tai-yuan Fu. We had been having good sport with hare and quail, and were returning to our camp. Just as we crossed a dyke that ran along the edge of a deep irrigation canal, we saw several lines of geese approaching us. I ran back to the dyke, and crouched behind it till the geese were directly overhead, when I fired, first at one goose and then at another in rapid succession. The line continued unbroken for a bit, but presently I noticed one bird break away and fly across the river. It described a wide circle as it slowly descended, and finally struck the ground, rolling over and over. Marking the spot I hurried back to send a man to fetch my goose. There ensued an argument as to where the goose was, my wife declaring it to be in one direction, while I was equally positive that it was in another. We decided to send the man to both places, and to our surprise and delight he returned with two geese. Both my shots had told, and my wife had watched one of the wounded birds, while I watched the other.

On another occasion I fired at a flock of geese with my rifle. I saw the dust caused by the bullet striking the ground beyond the geese,

which rose and flew northwards. I was about to turn away, when I noticed one goose leave the others and fly down to the river about a quarter of a mile away. I hurried to the spot, and sure enough there was a fine goose lying dead with a hole right through its body.

Once when two of us were out for a day's sport along the banks of the Fen Ho we found that the geese were very wild. We could not approach them, so we devoted our time to smaller game. At last we turned our ponies' heads homewards, and were riding along, chatting as we went, when suddenly a flock of geese rose on our right, and tried to cross in front of us, as they flew towards the river. Noticing that they were keeping low I set spurs to my pony and he bounded forward. The geese saw me coming and tried to swerve away, but they were too late, and, letting drive at them with both barrels, I knocked out a couple. A little while later my friend successfully brought off a beautiful long shot with his rifle.

A little over a year ago (1909) I enjoyed an excellent day's sport out on the Si-an Fu plain. The geese were particularly plentiful there. I was alone, and had my rifle and shot gun with me. A cart had been hired for the day, but I found the geese were quite easy to approach without it. The wind was a bit troublesome and spoilt several rifle shots, but I managed to bag five geese during the morning. At noon they cleared off to the mud flats of the river so I devoted my attention for a little while to some ducks. Later on a hare came in for a fatal dose of shot, and was added to the bag; while the day's proceedings wound up with a successful shot at a fifteen pound bustard.

Number One Shot is the best to use for geese, while either a 12 or 16 bore gun can be used. The latter weapon sometimes does better work than the former for it hits harder. I was out with a friend one day, who carried a 16 bore shotgun, while I used a 12 bore. The geese were rather shy, and we could not get very close. Nevertheless, my friend never failed to bring down his bird out of each flock that we stalked, while I had to be content with a few feathers. That I was not missing was proved by the feathers that came floating down each time I fired. It was simply that the range was too great for my gun, but not for the 16 bore. We were using the same make of cartridge.

If a rifle is to be used, then one with a fairly heavy bore should be chosen. A high velocity rifle is too dangerous to use on the plains of North China, as one can never be sure where the ball will fetch up. One may find oneself in trouble for having let daylight through a native or his cow. A small, light bore rifle will not easily kill a goose. The finest spot that I know of in North China is undoubtedly the valley

of the Wei Ho, the river on which is situated the capital of Shensi. During my stay in those parts my larder never lacked game. Wild ducks, also, were particularly plentiful, while bustards and cranes were to be found in large flocks. I have seen photographs of enormous bags made in this district, in fact one might look upon the country surrounding Si-an Fu as a sportsman's paradise. Immediately south of this plain there stretches a range of precipitous mountains. At one extremity of this range is the famous Hua Shan, and at the other the mighty Tai-pei Shan, which rises to a height of 12,000 ft. Along these mountains can be found the serow (a species of goat-like antelope), the takin, the wild boar, the stag, the roedeer and the goral, to say nothing of smaller game.

A collector friend, writing to me from this district, said that they had in their larder at the time of writing the following kinds of game:—goat-ox, goat-antelope, venison, wild boar, goose, duck, pheasant and hare.

Before closing this paper, I must just mention the swan, three species of which have been recorded in China. The first, and commonest is the whistling swan (*Cygnus musicus*). This is a magnificent bird, which may be seen in small flocks from time to time. A few Europeans have been fortunate enough to secure one, but it falls to the lot of most sportsmen only to view them from a distance. In the winter of 1912-13 swans of this species occurred in enormous numbers in certain districts in Southern Anhui. Here they might be seen, literally in thousands upon certain flooded areas, but they proved absolutely unapproachable, only one European being fortunate enough to secure one with a rifle shot.

The second species is *C. jankowskii*, and is considerably smaller than the foregoing. The plumage is pure white, while the base of the beak is of a pale yellow, not orange-yellow as in *C. musicus*. It occurs very plentifully.

The other species (*C. olor*) has been recorded only twice, once in North China and once on the Yang-tze.

CHAPTER XVIII.

WILD DUCKS.

As the sportsman traverses moor and fen in quest of this wary game, or crosses the inland lakes during some week-end trip, he frequently sees birds belonging to the great family of Anatidae, which, though he recognises for something he can certainly include under the heading of duck, yet fails to further identify; nor does he know anything of their habits, except that annually they pass to and from the great breeding grounds somewhere in the far north.

The object, then, of these few remarks, is to assist local sportsmen in the identification of some of the many peculiar looking ducks that will doubtless fall to their guns this season. Often a very rare bird goes to swell some fowler's bag, with only a passing comment; whereas an intelligent recognition of the numerous species met with adds greatly to the interest and enjoyment of a day's sport.

First amongst Asiatic and European ducks is the common wild duck or mallard (*Anas boschas*). This handsome bird heads the list not merely because of its superiority from a gastronomic point of view, but because it is *par excellence* a sporting bird. It is more numerous than any of the other species (except perhaps the common teal), and whether stalking, flight shooting, or the use of decoys be resorted to, it offers the best sport. There is no need to describe the appearance of this familiar bird. It is the ancestor of nearly all our domestic breeds, which fact alone testifies to the superiority of its flavour.

Breeding in the far north, it often winters in the milder parts of the northern provinces of China, and may be found in enormous numbers in Honan, and South-central Shensi. Especially is it numerous in the Wei Valley and along the Yellow River in these two provinces. Here record bags may be made from November to February, without resorting to any of the many methods usually employed by fowlers. One has but to walk over the rice fields or along the streams, debouching from the mountains, and take the ducks as they rise. Several birds may be brought down with each shot, so thickly do they crowd upon the narrow water-ways.

The food of the mallard, consists as does that of most other species, of the seeds and shoots of waterweeds, and the gleanings of the paddy fields. At night they will even feed upon the corn fields, though dawn always finds them once more in the vicinity of water.

Next to the mallard comes the equally common and well known teal (*Querquedula crecca*). An interesting fact about birds generally may here be noted. It is that the members of those species which are considered the best eating, are usually more numerous than those whose flesh is inferior or worthless. It is so with the ducks, and also with the snipe. The mallard and teal are certainly more numerous than any other kind of duck, while it is equally certain that during a day's snipe shooting one sees more snipe than members of any other species. In good scrub country what bird occurs in greater numbers than the pheasant, or in the loess hills than the partridge? What non-edible birds, except the crows perhaps, does one see in such vast numbers as the wild goose, the quail, the sandgrouse or the rockdove?

To return to our subject: the teal, like the mallard, is so well known that a description is needless. It is sufficient to say that where the mallard is found, there also will the teal be: the two species follow each other, and may often be seen in one large flock together. They arrive earlier than any of the other ducks and stay longer.

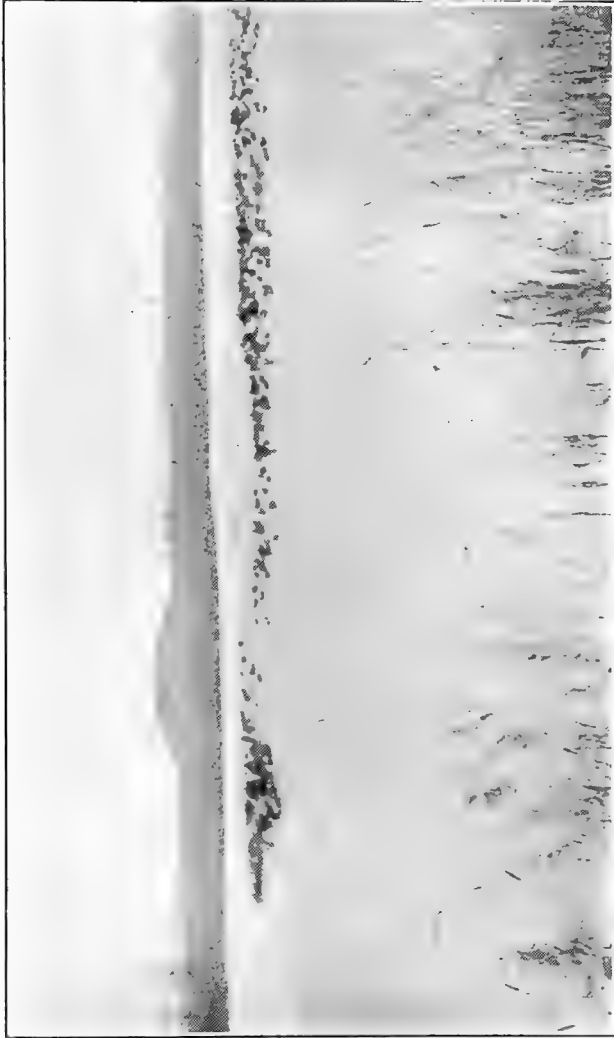
There is a peculiar satisfaction in browning a flock of teal, which is often the only way of getting them, for they fly so fast, and keep so close together that it is impossible to pick out single birds. Teal occur in larger flocks than any other duck, and may sometimes be numbered in thousands, though this is usually when several large flocks join together in a long migration.

It is difficult to decide which of all the numerous species should come next in the list, and I shall not attempt to arrange them, but take them haphazard, just as one might do while sitting comfortably—or uncomfortably—behind some sheltering rushes, as the unsuspecting birds come whistling over-head at dusk or dawn.

The pin-tail duck (*Dafila acuta*) is another well known species, with its exceptionally long brown and white neck, long pointed tail, and grey vermiculated plumage. This species is good eating, and in places is very numerous. It winters, however, very much further south than is usual with the two foregoing species. The female, in common with all wild ducks is smaller than the male, and of an inconspicuous brown colour.

Not unlike the pintail is the long-tailed duck (*Harelda glacialis*). This is a very rare bird. Its plumage is mostly white, the breast, back and wings being black.

Plate XXIII.



WILD DUCKS ON THE SI-AN FU PLAIN, SHENSI.

The golden-eye (*Clangula glaucion*), so called because of its bright yellow staring eye, is also very common, though it is not often that a male of this species is brought to bag. This is due chiefly to the unusual fact that the ducks greatly outnumber the drakes. Also the drakes are very much shyer, and fly faster than do the ducks. The drake is of a shiny blue-black colour with a white breast, white-barred wings, and with a white dot on the side of the head. It is somewhat smaller than the mallard. Its beak is short and thick, more like that of a goose, while the body is very flat, the legs seeming to stick out from the sides. The duck is of a brown-black colour, with a brown head and white only on the wings, and under-parts. This species invariably feeds upon certain weeds that grow at the bottoms of ponds or backwaters, and consequently has to dive for its food. It stays under water for minutes at a time, so that, if the fowler can creep up to a flock feeding, he may get shot after shot as those birds under water, unaware of what is happening, come leisurely to the surface for air, and then, taking to their wings, offer excellent marks. In this way a friend and I once got seven birds out of a flock of fifteen. Even when disturbed these ducks will often circle over the pond offering several shots before they leave for some safer locality. The flesh of this bird is very good eating, and is covered with an unusually thick layer of fat.

The shoveller (*Spatula clypeata*) may readily be recognised by its unusually large and broad beak, from which indeed it derives its name. The male is a very handsome bird with its dark green metallic-lustered head, white breast, red-brown belly and sides, delicate blue-grey wing coverts, green-barred wings and orange legs and eyes. The female is of an uniform mottled brown. The flesh of this species is not very palatable, being of a course oily flavour.

In the interior Swinhoe's duck (*Anas zonorhyncha*) is very common, and it is the only duck that breeds so far south as North Shansi, and Chihli. It is of a general brown colour, resembling that of the female mallard. Its breast and lower parts are very much darker, however, while its legs are of a bright orange-red colour, and there is an orange band on the otherwise black beak. It is somewhat larger than the mallard, and has a very much longer neck. Its flesh is excellent. This species is undoubtedly the ancestor of the large brown and white, upright-standing ducks, which, fattened by forced feeding, form so important a dish at a Chinese feast. These birds can only be shot along the rivers and in the marshes of North Shansi and Inner Mongolia, very late in the season, for like the cuckoo they arrive from the south very late, and are off again comparatively early. Round

Tientsin they are plentiful as early as the latter part of August, a few also breeding in the vicinity.

The foregoing six species are the commoner varieties found in North China. We now come to some of the less common ducks. Of these the falcated teal (*Unetta falcata*) is one of the handsomest though not the rarest. It has a dark green head and crest, which reflects a coppery sheen in the sunlight. The breast is grey, closely barred with black, the sides vermiculated while the black and wings are handsomely marked with black and white. Another species is the Mandarin duck (*Aix galericulata*). The Mandarin duck is smaller than the falcated teal and has a very pretty hood, and large orange coloured feathers, which stand up from the back like miniature wings, giving the bird an unreal appearance. It is peculiar, in that it will light on trees, and even builds its nest in hollow trunks. I found these birds breeding freely this summer, along the streams and rivers of the Manchurian forest country. The mothers showed great devotion in the care of their broods, and would readily expose themselves within striking distance in their efforts to engage my attention, while their young ones escaped into the thick underbrush that lined the streams. The call of these birds is a peculiar whistling note, repeated rapidly as they fly, low and swift, over the water from one feeding place to another.

The pochard (*Nyroca ferina*) is another handsome but rare duck (at least in North China.) It is characterized, and may readily be recognized by its red-brown head and grey vermiculated body feathers. At home, this duck ranks with the mallard as a game bird, and the far famed canvas-back of America is only a large kind of pochard.

Another rather rare duck is the Baikal or spectacled teal (*Querquedula formosa*). This bird is larger than the common teal, has a beautifully marked head, (dark green and buff), pale pinkish-buff breast dotted with black, while the wing coverts are formed of long curved pointed feathers, divided longitudinally into buff and a rich red-brown, by a black median line. I found this species very common in Anhui last winter, and it is sometimes shot in this locality.

The wigeon (*Chaulelasmus streperus*) the summer teal or garganey (*Querquedula ciria*), the tufted duck (*Fuligula cristata*) the white-eyed pochard (*F. ferruginosa*) also occur. Of these the summer teal is perhaps the most note-worthy as it appears in great numbers after all the other duck have gone northward. It closely resembles the female of the common teal, but can always be distinguished by the pronounced white eyebrow, and slatey-blue colour of the back.

There are two species of sheldrakes (or sheld-ducks) which sometimes appear during the migrations. Of these the ruddy sheldrake

Plate XXIV.



THE COMMON TEAL (*Querquedula crecca*).

(*Casarca ferrugina*) is the more common. This handsome bird is characterized by its snowy white head, rich orange breast and back, and black and white wings marked with a broad green band. It is about the size of a small goose, but unfortunately its flesh is utterly uneatable. It is very common during the winter in South Shensi and Honan. In migrating it follows the courses of the large rivers, and may be seen in flocks of a dozen or so resting out on the mud flats.

The common sheldrake (*Tadorna cornuta*), differs from the foregoing species in having a dark green head, and only a little orange on the breast and wing coverts. The rest of the body is white, except for the black primary feathers and the glossy green band of the wings. This species is more of a sea duck than the other, its flesh being quite useless.

Both species breed in Mongolia, where they have their nests in deep horizontal tunnels. The ruddy sheldrake resorts to rocky cairns, while the common sheldrake prefers the tussocky shores of lakes.

Another sea duck is the velvet scoter (*Cidemia carbo*), which is entirely black except for its bright red and orange coloured bill and legs.

Finally we come to the Mergansers, peculiar narrow-billed birds, which scarcely look like ducks at all. The largest of these is the goosander (*Mergus castor*), which is characterized by a dark green head, long narrow, serrated beak, ending in a sharp hook, delicate rose coloured breast, dark back and pied wings. This bird is about the size of a goose, and is very handsome in appearance, though the flesh is of a poor flavour. Like the other members of this genus the goosander is a good diver, while the formation of the bill suggests a fish diet.

The red-breasted merganser (*Mergus serrator*) resembles the goosander in shape, though it is considerably smaller. It has a red beak similar in shape to that of the latter, reddish-orange legs, dark green head, white collar, black, dark brown and grey upper parts, reddish brown breast, white underparts, and white upon the wing. It is decidedly more common than the goosander, and I have seen it in the mountain valleys of western Shansi in mid-winter, where open holes in the ice-bound stream provided the means of securing food.

Lastly there is the smew (*Mergus albellus*) a small, almost entirely white duck, which inhabits the sea shore, rather than inland watering places. It also has the serrated bill.

This list does not pretend to be exhaustive on the question of ducks, but local sportsmen are hardly likely to come across any other species of duck even if they are lucky enough to secure specimens of all those mentioned.

It is almost presumptuous of me to offer any tips to Tientsin sportsmen on duck shooting, for many of them have years of experience behind them. Still, to beginners, the following hints may be of help.

No. 4 shot is perhaps the best size for duck, used in a 12 bore gun with left barrel full "choke." When shooting never fire at birds coming head on, but wait till they are just past, and then choose birds which are side on, not dead overhead. The reason for this is two-fold. First an on-coming duck presents only its chest as a mark, and the thick feathers pointing backwards cause the shot to glance off. Secondly such shot as enter find their way only into the thick muscles of the breast and do no vital damage. On the other hand, shot reaching the bird from behind, below or to one side, travel up the feathers, do not glance off, and find lodgment in the vitals, which are protected on the side only by the fragile, lightly covered ribs.

Unless a duck-punt is used it is almost hopeless to try for duck except in the early morning or evening, and the best results may be had, out here at least, by waiting for the evening flights. To avoid disappointment the feeding grounds should be carefully located, and the regular lines of flight noted.

In conclusion the writer would like to suggest that the Tientsin sportsmen keep records of the different species of duck, and other interesting birds they secure, and send their results to the editors of the local papers.

CHAPTER XIX.

SNIFE.

It is probable, that if a hundred sportsmen were asked what bird they considered the most difficult to hit, ninety-nine of them would unhesitatingly answer "the snipe." It may be that the pheasant is harder to kill, that the chukar (red-legged partridge) will carry more shot, or that the thick feathers of the duck afford it greater protection; but all these birds are comparatively reliable in their habits and fly straight, though fast, and so can be readily accounted for by a reasonably good shot.

The snipe, however, is as uncertain a bird as it is possible to imagine. It rises in unexpected places, sometimes almost out of range, sometimes under one's very nose, and as often as not after one has passed the spot, where it lay crouched ready to spring like a rocket into the air. One may never be sure in which direction the snipe will go, and besides being an unusually fast flyer, it often cuts a rapid zigzag course, thus adding enormously to the difficulty of bringing it down. Again, not only does each bird differ from the last in its mode of procedure, but they all vary very considerably with the weather and the time of day. Thus on a windy day some birds will stick close; while, amongst those that fly, the tendency is to rise into the wind: and in the evening snipe will rise within easy range, when earlier in the day it was impossible to get a decent shot.

To take advantage of the snipe's rising into the wind the sportsman walks down wind, only to find that the birds hear his approach sooner and so get up at a greater range.

Then again the ground favoured by snipe varies, and the sportsman never can be sure just where they will be on the particular day he chooses for his outing. Where he found them thick one day there will be none the next, and, after having carefully waded through likely looking marsh for a couple of hours, he reaches some dry ground and slings his gun over his shoulder to light his pipe, up gets a "whisp" and with derisive chirps go skimming away out of sight.

Snipe, too, are not always easy to see, as they rise amongst the reeds, and were it not for the unmistakable warning call they usually give, far fewer birds would be brought to bag.

Thus the man who wishes to make good bags of snipe, besides being a good shot, must be as resourceful as his quarry is erratic. He must be prepared to change his tactics with the hour and the wind, and must have at his back considerable experience and knowledge of the game he is after.

For the beginner a cool head and straight eye will do much, but he will be beaten time after time by the unexpected and unfamiliar shots presented to him, and he will find that it is only by dint of the careful study of his quarry, much practice, and the exercise of considerable resourcefulness that he will ultimately excel in snipe shooting.

Perhaps the following reliable tips may be of use to him:—

1. A snipe going away is invariably on the rise, therefore aim high: when fairly on the move its speed is considerable, therefore aim well in front.

2. Never walk into the sun, for as well as being more or less blinded, one is rendered more conspicuous to the birds. By walking away from the sun the birds become more conspicuous as they rise, and the sportsmen considerably less so.

3. As a general rule walk down wind, but be ready to change if it is found that the birds are getting up too far ahead.

4. Always take your time when aiming: snap shooting is liable to prove disastrous to the beginner.

5. Unless one has a good retriever, No. 8 or even heavier shot should be used; for though one is more likely to hit with No. 9 shot, the birds are not so likely to be killed on the spot, and often drop at considerable distances and are hard to find.

In North China, which is one of the best countries in the world for snipe, we have four common species which go by that name, viz. the lesser pintail snipe (*Gallinago stenura*), Swinhoe's pintail snipe (*G. megala*), the common snipe (*G. media*) and the painted snipe (*Rynchea capensis*).

Of these the last is not a true snipe, but is more nearly related to the rails, and belongs to a genus of its own (*Rynchea*). It is about the size of the snipe, and is very much the same shape. It is very differently coloured, however, being more handsomely marked, from which fact it derives its name. What makes this bird somewhat unique is the fact that the female is more richly coloured than the male, a characteristic, the reverse of which is the rule with most other species of birds where there is a difference in the plumage of

the sexes. The painted snipe is rather uncommon, while its flight is slow, so that it cannot rank with the true snipe as a sporting bird.

Of the three true snipe, the common snipe (*Gallinago media*) is by far the most numerous round Tientsin. It has a wide range, being found right across Asia and Europe, and is also the species so sought after by sportsmen in the British Isles. It is the smallest of the three species mentioned, is the richest in colouring, and has longer and more pronounced longitudinal buff markings upon the back. The under surface of the wing is of a very light grey, the feathers being lightly barred with dark grey. The most characteristic feature, and the one by which it can be distinguished unmistakably from the other two species is the tail. This is comparatively large, and contains fourteen feathers of almost equal size and uniform shape. These tail feathers are used in Europe to make trout flies.

The pintail snipe are so called because of the peculiar attenuation of the outer tail feathers into almost pin-like shafts.

Of the two species, Swinhoe's pintail (*Gallinago megala*) is the larger. In other respects it is more or less an intermediate form between the common and lesser pintail snipe. Thus it is lighter in general colour than the common snipe, but slightly darker than the lesser pintail. Its tail is composed of twenty feathers, the outer six on either side being very much smaller than the others, though not so pin-like as those of the lesser pintail. The upper surface of the wing is more spotted than in either of the other two species, and its head is also darker in colour. The under surface of the wing is much more strongly marked than in the common snipe, the breast is more spotted, and the belly less white than in the other species. So far I have only been able to record two of this species this season, out of a total of about seventy birds examined (Sept. 15th, 1913).

The remaining species, the lesser pintail snipe (*Gallinago stenura*) is slightly smaller than Swinhoe's snipe, but considerably larger than the common snipe. It is the lightest coloured of the three, and has the smallest tail. The latter makes up for its size in the number of feathers it contains, there being no less than twenty six, of which the outer eight on either side are very narrow and pinlike. The dark bands on the head are spotted with light brown, while the light markings on the back assume the form of transverse bars rather than longitudinal streaks as in the other two species. Only two of this species have fallen to my gun this season, though I found them very plentiful last May in Manchuria. They breed within the Arctic Circle, so that those I saw in May had a long way to go before the end of June

Neither of the pin-tail snipe are so active or fly so fast as the common snipe, but they are usually much finer and fatter birds.

Two other snipe occur, though rarely in North China. These are the jack snipe (*Gallinago gallinula*) and the solitary snipe (*Gallinago solitaria*). Of these the latter may be met with in the mountainous areas, in some places throughout the year. It is much the largest of all the snipe, being sometimes mistaken for the woodcock. It most nearly resembles Swinboe's snipe, but is darker and browner above, besides being larger.

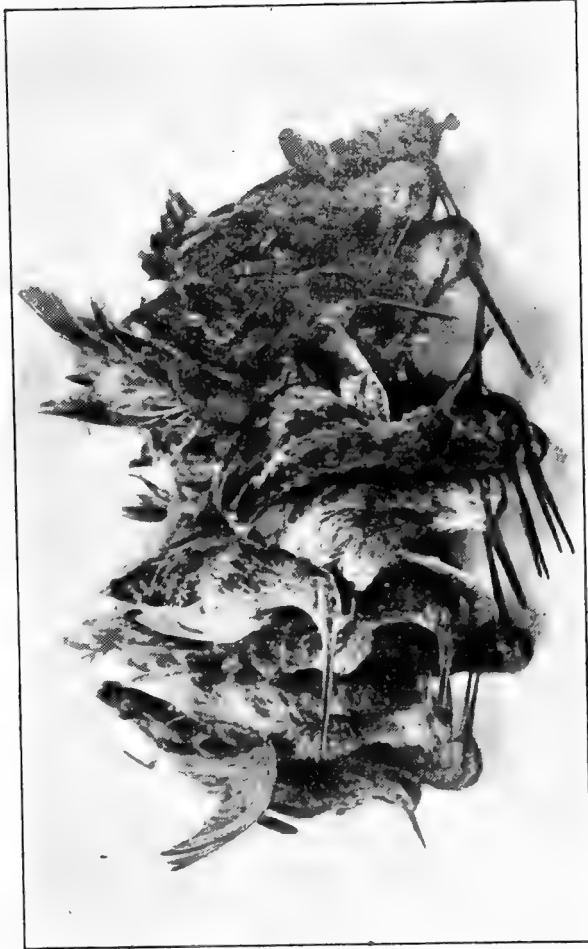
With regard to the best snipe grounds, Tientsin sportsmen doubtless know far more than the writer does about local conditions, but they may be interested in hearing of other good grounds further inland. There are some good snipe districts accessible from the Pekin-Kalgan line, notably round Hsuan-hau Fu. In the extensive valleys formed by the large affluents of the Yellow River, and other rivers flowing eastward in Shansi, there are many excellent marshes or rice-growing areas, where good bags of snipe may be made; while along the road from Tungkuan to Si-an Fu in Shensi stretch mile upon mile of the best snipe country imaginable. Frequently when travelling in Kansu, one may come across small marshes, where snipe are plentiful in the right season.

Still I think, on the whole, that the residents of Tientsin have within easy reach of them as good snipe grounds as anywhere. Large bags have been made in the past, and doubtless will continue to be made, for snipe are not appreciably effected by the heavy inroads which are made into their numbers by sportsmen and hunters. So vast are their numbers, that but a mere skimming is taken as they pass to and from their breeding grounds.

It would be interesting to know a few of the record bags made round Tientsin. No very large bags are made in the British Isles, but bags of over one hundred couple have been made in India and Ceylon. It is said that 223 birds is the record bag for India. I believe this has frequently been beaten in China, but it is not likely that any bags made out here can compare with those made in Louisiana, where 1,943 birds were shot by Mr. J. J. Pringle in seven days, his record for one day being 366.

There is a story told of a famous New York snipe shooter, who took on a wager that he would shoot a hundred snipe with a hundred cartridges. He started out and shot very carefully. With each shot he brought down his bird till the figure of ninety eight was reached, when, through a defective cartridge, he lost one bird. He was not beaten,

Plate XXV.



A BAG OF SNIPE.

however, but reserved his last cartridge till he got two snipe crossing each other, when he fired, and bagged them both, thus winning his wager.

So many people in Tientsin go snipe shooting that one hesitates to give any personal anecdotes, but an article on snipe seems incomplete without a yarn or two. Will the old stagers excuse a description of a day with the snipe, for the sake of those who are so unfortunate as to be unable to indulge in what is one of the finest forms of sport going?

Early one fine September morning a little party of us, three in number set off in rickshaws for the bridge which spans the canal behind the Japanese barracks. There was my old friend Sin, a new acquaintance and myself—all eager for a good day's shooting. The crisp air blew gently from the north, and it was just chilly enough to make us thoroughly appreciate the first warm rays of the sun that pierced the low mists enshrouding the town behind us.

Bowling along at a good rate we soon reached the bridge, where we engaged a sampan, and settling ourselves comfortably, allowed the boatman to pull us up the canal towards the race-course at his own rate. Three small boys had collared our belongings and sat proudly in the stern, smoking cigarettes and chattering about the different kinds of snipe, the best grounds to get them in, and the peculiarities of the many Lao Yehs that came to shoot them; while we, comfortably pulling at our pipes, listened contentedly or called up reminiscences of former shooting trips.

Presently we reached a spot, near which I had already been having good sport with snipe, so we pulled up to the bank and set off towards some paddy fields. We began well. Two snipe getting up were bagged by Sin and myself. These, however, were the last we put up in this area, where but three days before I had bagged a dozen in less than an hour, not including five which I shot, but could not find in the tall reeds.

At the suggestion of one of the small boys we returned to our sampan, and continued up the canal. Presently turning more to the west we passed the old railway embankment and continued for another mile or so, finally pulling in to the bank once more near a village called Shi-liu-chien-fang-tzu (Sixteen Rooms). Half a mile over dried grass-covered ground brought us to some swamps and the fun began.

Sin neatly dropped a bird with his automatic. Next a fat snipe got up in front of me. My second barrel knocked out a feather or

two, but the bird flew some distance and alighted. That was the beginning of my troubles. Continuing, I put up the snipe again, but this time it flew slowly and I got rattled (as the Americans say) and foolishly determined to get the bird at all costs, with the result that I ran right into a whisp of six snipe, and made a double miss. Just as I slipped two more cartridges home up got my wounded bird, and to my chagrin, I missed again. That was the last I saw of it, but a minute or so later I bagged my second bird.

Meanwhile my companions had been popping away merrily, and had four birds between them to show for it. Then for about an hour the snipe seemed to have disappeared, but at last in the course of a long tramp through the mud, I ran across some paddy fields out of which the snipe popped one after another. I dropped two, and then began missing again. The birds seemed to be more exasperatingly active than usual. They either rose just out of range or right under my feet. Some rose straight up into the air, and others skimmed low over the standing rice stalks, or zigzagged away to the right or left. Finding that I could do nothing with them I decided to head for the boat, and get a rest and some lunch.

My companions had evidently come to the same decision for they joined me not far from the bank of the canal. A comparison of bags showed that Sin led with five snipe and four pratincoles (peculiar swallow-like birds related to the plovers, and very good eating). My bag contained four snipe and our friend's two snipe and a whimbrel. It was a pretty poor show considering the number of birds about.

Crossing the canal and tying up under the shelter of some reeds, we did ample justice to the delicacies spread before us.

After lunch we lay around and smoked for a couple of hours. Sin, who can never resist the chance of a swim, went into the canal, much to the delight of the small boys. The day was perfect. Even as we thus enjoyed our noontide rest, we were surrounded by a hundred forms of aquatic and aerial life. Over head the pratincoles coursed like enormous swallows, rising, sinking and circling in their abundant vitality. Ever and anon a flight of grey plovers would pass, flapping lazily, with long plaintive calls. More rarely a whisp of snipe would come drumming down out of the invisible, and go skimming low over the reeds and rushes, alighting abruptly where it pleased them. A hoarse croak would announce the passage of a clumsy heron seeking some new feeding ground, or the sharp call of the coot and the peep of the baby grebes from the reeds, would tell us that there, too, was busy active life. In the canal widening circles on the water's surface would tell where some fish had risen, and watching, we might see carp and



THE COOT (*Fulica atra*).



THE COMMON SNIFE (*Gallinago media*).

dace leap high into the air, their silvery quivering bodies scattering showers of crystal drops, ere the waters swallowed them again. All nature was alive and moving to the accompaniment of the hum from a myriad insect wings.

As we lay and watched there came an ancient villager prodding his way along the bank of the canal, up to his waist in water. With a quick movement he drew from the water the writhing eel-like form of a gigantic catfish, securely hooked on the end of a long bar. Placing it in his basket, he turned his face towards the sound of our applauding voices—and lo! he was blind. We might have guessed it. None but the blind could have had sufficient delicacy of touch to find so unerringly the slight dent in the muddy bank, which alone marked the spot where the fish had buried itself. Next instant a shining dace glistened for a moment between his fingers ere it disappeared into the basket, to be followed shortly by a large crab. Apparently satisfied with his day's catch, the old man crossed the canal and was led away to the village by a tiny grandchild.

At length rested and refreshed we returned to the snipe grounds, and for the next two hours had all the shooting we wanted. My shooting had improved considerably, and I got several couple of snipe almost at once, but after a while the continual tramping in the soft mud began to tell. In the last half hour I absolutely disgraced myself, and finally when a wounded bird escaped me after six cartridges had been expended on it, I gave up. My bag was now thirteen snipe and four whimbrels. Some of my shots had pleased me very much, notably one in which I brought down two snipe at once—like the New Yorker.

My two companions also improved their shooting after lunch. Sin added several more snipe to his bag and a couple of whimbrels. Our friend was unlucky enough to run out of cartridges, when a considerable distance away from either of us, and so was forced to watch snipe after snipe get up and go without being able to attempt to stop them.

Finally we all met again at the sampan, had some tea, and then started home. In spite of our bad shooting we had had a thoroughly enjoyable day. The weather had been perfect, there had been no lack of birds, and, after all, when the forty odd head were put together they made a handsome enough looking bag. The journey home in the cool of an ideal September evening, as we glided along the numerous waterways, past tall and stately reeds, with the soft glow of the sinking sun lighting up their feathery tops, was by no means the least enjoyable part of a typical day's outing after snipe.

CHAPTER XX.

THE PERCHING BIRDS.

It is not an easy matter to define, for the general reader, what is known amongst ornithologists as a perching bird, for to do so would mean entering into a general discussion upon the whole class *Aves*. The order *Passeres* includes all the songsters and most of the brilliantly hued birds so dear to the heart of the bird fancier. They commence with the crows, and, in this country at least, end with the martins and swallows. In fact this order is by far the greatest, containing, as it does, well over thirty families represented by innumerable sub-families, genera and species. Thrushes, finches, larks, starlings, Birds of Paradise, wagtails, butcher birds, tits, wrens and even such peculiar birds as the South American bell-bird and the cock-of-the-rock belong to this great group.

In China the order is well represented, nearly half the known species of birds belonging to it.

There are some fourteen members of the crow family (*Corvidae*). The largest of these is the raven (*Corvus corax*), which is only common in the more desolate regions along the Mongolian Frontier. Here it lives largely upon the dead bodies of the Mongols, thrown out from the camps. On this account the Chinese name for it in these parts is "Mung-ku kuan tsai," (The Mongol's coffin). Next in size is the carrion crow (*C. corone orientalis*). This bird is very handsome, being of a shiny black, with neat plumage, and having a comparatively small bill. The Chinese jungle crow (*C. leucilanti*), with its enormous thick bill might easily be mistaken for the raven, were it not for its small size, which is about that of the rook. It is common in Shansi, being particularly abundant in some places. A crow that is less common in the mountains, but which occurs fairly plentifully on the plains is the white-necked crow (*C. torquatus*). As the name suggests this bird differs from all the foregoing in having a broad white collar. It also has a heavy bill, but is not so large as the raven.

The rook (*Frugilegus pastinator*) is extremely common. Leaving the rookeries in the interior during the winter, it journeys to the coastal regions, where in company with the jackdaw (*Coloeus dauuricus*) it congregates in great flocks, as Tientsin residents have good reason to know. The rook may easily be distinguished from the crows, by its naked face and narrow bill.

The little jackdaw occurs everywhere in vast numbers. It is a pretty and familiar bird with its white neck and belly. Another species which is not so common in these parts is the black jackdaw (*C. neglectus*). This bird is of the same size as the other, but is without any white.

In the interior, especially in some places, the chough (*Graculus graculus*), is very abundant. It is a graceful bird, about the size of a rook, with shiny black plumage, a long, curved, orange bill and orange legs. It lives mostly in mountainous and hilly regions, building its nest in holes in cliffs. In winter, as is the case with many members of the crow family, large flocks of these birds may be seen. They then associate very frequently with the jackdaw.

Everybody is familiar with the common magpie (*Pica caudata*). It is found everywhere, throughout North and Central China.

The azure-winged magpie (*Cyanopoliis cyanus*) and the blue magpie (*Urocissa sinensis*) are two of the most beautiful birds found in North China. The former is the smaller and is characterized by a black head, pearl-grey breast, pale blue-grey back and delicate azure-blue wings and tail. It occurs all over North China. The blue magpie is somewhat similarly coloured, but has more blue about it. The black head is spotted with light blue, the spots merging into each other on the nape of the neck. The throat and breast, also, are black. The back is of a pale mauve-blue, the wings azure tipped with white, the tail mauve-blue tipped with white and very long. The legs are of a bright orange-red. This bird occurs in Chihli, Honan, South Shansi, Central and South Shensi and South Kansu. It keeps to more or less wooded areas, though it may be seen in gardens even in the vicinity of large towns.

The jay is represented in North China by two species, *Garrulus sinensis* in the more southerly portion, and *G. brandti* in the north. The latter also occurs in Manchuria. In general the plumage of these two birds resembles that of their European cousin, but the blue on the wing is more extensive, and there is also a white patch on each wing. In the case of *G. sinensis* the head and crest are plain, in the case of

G. brandti slightly striated. In both species the rufous colour is more pronounced than in the European bird.

The nutcracker (*Nucifraga caryocatactes*) is one of the most conspicuous denizens of the forested regions of Shansi and Kansu. I have not seen it in any of the other provinces. About the size and shape of the jackdaw, it is of a brown colour, with white spots on the head and neck, black wings and black and white tail. Where it occurs at all it is very plentiful, being a lively active bird. It is a great nuisance to the hunter for it always discovers him, and gives warning to all the game in the vicinity by cackling vigorously. Like all the other members of the crow family it makes a most interesting pet, owing to its superior intelligence and undoubted reasoning powers.

Next to the crows come several birds, each the single representative of a different family. Of these the grey starling (*Spodiopsar cineraceus*) is undoubtedly the commonest. This bird should be well known to sportsmen in Tientsin, for it appears in large flocks during the snipe season, and by making a noise similar to that of a snipe, which it also somewhat resembles in flight and its way of getting up, often deceives the beginner. It is about the same size as the British starling, but has a grey plumage with conspicuous patches of white on the cheeks. The bill and legs are orange-yellow. It is a great nuisance to fruit growers.

The Daurian starlet (*Sturnina daurica*) is a much smaller bird, which also passes through in large flocks to breed in Mongolia and Southern Siberia.

Another bird common in these parts, and also wherever there are trees and marshes together, is the drongo (*Buchango atra*). This is a bird with jet black plumage, a long tail, gracefully forked at the end, and of the size of a thrush. It is known in India as the kingcrow. Its food consists of butterflies and other insects, which it dexterously catches in mid air. It keeps to the willows and other trees that so frequently line marshes, canals and rivers in this country.

The next species is the golden oriole (*Oriolus indicus*), a bird with the most striking plumage, and possessed of a wonderful voice. The colour of the adult is a rich golden yellow intensified by jet black on the wings and tail. A black band also occurs on the head, passing from the base of the beak, through the eye, to form a patch on the back of the head and nape. The legs are plumbeous, the beak pink, and the eye bright red. Immature birds are of a green colour above, striped on the under parts.

The oriole is very shy, so that it is seldom seen. It hides in the dense foliage of the largest trees, whence it pours out its liquid, dulcet notes in a short, but indescribably sweet song. Unfortunately it does not thrive in captivity, for it would make a most handsome addition to the aviary.

Our next family is the *Fringillidae*, the finches, which is a large one, including a great many sub-families.

Not counting the sparrow, the commonest of these is the redpole two species of which occur. These are *Linota linaria* and *L. canescens*. They make good pets.

Often found associating with the little flocks of redpoles are the rose-finches, two species of which are common in North China. These are *Carpodacus roseus* and *C. erythrinus*. These beautiful birds, have the plumage on the body of a brown colour, washed with rose, which gets more and more intense with age. The feathers of the head are like the petals of some small pink flower, hence the Chinese name "Mei-hua-tou" (Rose flower head). *C. pulcherrimus* is another species of rose-finch, which is very rare.

Three species of hawfinch are common in the northern provinces, two others occurring further south. The common hawfinch (*Coccothraustes japonicus*) closely resembles the British species.

The other two, which belong to a different genus, are larger than the common species, with longer tails and even heavier bills. These are the large-billed hawfinch (*Eophona magnirostra*) and the black-headed hawfinch (*E. migratoria*). The Chinese value all these birds as trick-birds, and may frequently be seen in the streets with their pets tied to perches. Indeed the large-billed hawfinch shows a remarkable degree of intelligence.

The greenfinch is represented in China by the Chinese greenfinch, or golden wing (*Chloris sinica*), which as its name suggests is remarkable chiefly for the large amount of bright golden yellow on the wings. It is a little greyish-green bird, the maturer specimens being washed with golden-brown on the breast and lower back. This bird has a pretty little song, and makes a good pet. Another nearly related species is the siskin (*Chrysomitris spinus*), a little green bird, which is less common in North China than the foregoing species. It may be distinguished by its narrow bill and greener colour.

A common bird in the more mountainous regions is the brambling (*Fringilla montifringilla*). This is a bright, perky little fellow, not unlike the chaffinch. It has a red-brown breast, with head and back

of a deep Prussian blue, almost black. The tail is long, forked and of the same blue black colour.

The crossbill found in North China is *Loxia albiventris*. It is a peculiar looking bird with its remarkable beak, the hooked ends of which cross each other and give it its name. It has short legs and tail. The plumage is of a greeny-brown; the males are suffused with crimson and the females with yellow. These birds live upon pine seeds, and may be seen hanging on to the cones, the scales of which they pick to pieces with their powerful beaks. They make interesting pets as they show a remarkable degree of intelligence.

There are a large number of buntings found in North China, amongst which are the white-headed bunting (*Emberiza leucocephala*), the rustic bunting (*E. rustica*), the chestnut bunting (*E. cioides*), which inhabits the hills, the yellow-breasted bunting (*E. aureola*) a beautiful little bird with dark brown upper parts and a bright yellow breast, which is extremely plentiful in Mongolia and West Manchuria during the summer. Other species are the two reed buntings (*E. passerina* and *E. yessoensis*), the painted bunting (*E. fucata*), the little bunting (*E. pusilla*), the yellow-throated bunting (*E. elegans*) the yellow-browed bunting (*E. chrysophrys*), Tristram's bunting (*E. tristrami*), the grey-headed bunting (*E. spodocephala*), and the ruddy bunting (*E. rutila*), all of which may be recognized by their small beaks, forked tails and somewhat lark-like appearance. Another member of the same family, but of a different genus is the Lapland bunting (*Colcharius lapponicus*), which is only a winter visitor. It is distinguishable by the preponderance of white in its plumage, and is also somewhat larger than the foregoing species.

We next come to the larks, of which the Mongolian lark (*Melancorpha mongolica*), is undoubtedly the ablest, if not the sweetest, songster found in this country. It inhabits the northern portion of the provinces along the Mongolian border, and is very numerous in Mongolia itself. It is a large heavily built bird, with a black collar and conspicuous white patches on the wings. It is greatly prized by the Chinese. Almost every shop-keeper in a Chinese town owns one or more of these birds, which may be seen hanging outside the shop-front in characteristic dome-shaped cages. The vocal powers of this bird are remarkable, for beside being able to imitate any other songbird, it can mimic perfectly a cat or a kite, and to a certain extent a dog's bark.

The skylark is represented in North China by at least two subspecies, namely, *Alauda arvensis pekinensis* and *A. a. cinerea*. It has

never been my fortune to come across one of these fine vocal performers in the act of skying, as does the British bird, but I am told by one of my friends that they do sky. There is nothing, in the whole of the bird world that is more pleasing than a skylark pouring out its jubilant song as it mounts up and up into the blue vault of heaven. Certainly no phase of bird-life has inspired more poetry.

The crested lark (*Galerita leautungensis*) is another very good songster. It occurs everywhere. As the name suggests it possesses a long crest, that makes it quite a pretty bird, inspite of its dull drab plumage.

Two short-toed larks (*Alaudula cheleensis* and *Calendrella brachydactyla*) are common in Chihli, the former breeding in many places on the coast. Two shore-larks (*Alauda alpestris* and *A. sibirica*) also occur in North Chihli, but are not common.

Next to the larks come the wagtails, several species of which may be seen, especially during the migrations. The most beautiful of these is the yellow-headed wagtail (*Motacilla citreola*). It is of a grey colour with black and white wings and tail, and a brilliant yellow head and breast. It frequents marshes and river banks on its way to and from its breeding grounds in Siberia.

Another handsome species is the pied-wagtail (*M. leucopsis*). This bird has a white face, black breast, black and white wings and tail. It nests in mountain valleys, where it may be seen throughout the summer flitting about the rocks and pebbles in the stream beds.

A third species is the eastern race of the white wagtail (*M. bairdalis*), which is not unlike the pied wagtail, but has the top of the head black, the back and sides grey, with only a very little white on the wing.

Other species are the streak-eyed wagtail (*M. ocularis*), the yellow wagtails (*M. flava* and *M. borealis*) and the grey wagtail (*M. melanops*).

Nearly related to the wagtails are the pipits, the following species occurring in North China:—Richard's pipit (*Anthus richardi*), Gustav's pipit (*A. gustavi*), Blakiston's pipit (*A. blakistoni*), the tree pipit (*A. cervinus*) and the Japanese pipit (*A. japonicus*). These birds, like the wagtails frequent watery places, living upon flies and spiders. They are all of sombre hues, greys and browns predominating in their plumage.

The wall-creeper (*Trichodroma muraria*), our next species, belongs to a group, which is represented by but a comparatively few

forms. It is a graceful little bird peculiarly adapted to hunting for its food on the face of cliffs. Thus it has long curved claws, by means of which it can hold on to the merest little roughness on a rock surface. It also has a long curved beak, with which to pry into the cracks and crannies for spiders and other insects, upon which it feeds. It is of a pretty grey colour, with a crimson patch on each wing, and large white spots upon the primaries. The wings are very large and broad, giving the bird, when in flight, the motions of a butterfly. It has a short sweet song, the notes of which start low down in the scale, run rapidly up and end abruptly. It is very common in the mountains of Shansi and Shensi, but is extremely difficult to secure.

Between this bird and our next group, the tits, comes the nuthatch (*Sitta sinensis*). This little known bird keeps almost entirely to the wooded areas, where it searches for its food in the cracks and crannies of the pine trees. Like the wall creeper it can scramble up and down flat, slightly rough surfaces. It is very fond of hanging upside down from the pine-cones, amongst the scales of which it searches for seeds. It is a small grey bird, with pale chestnut breast. The tail is short; the beak rather stout, being used to split hazel nuts. In doing this the bird first jams the nut into a crevice in the bark of a tree, and then hammers it till it splits. It is this habit which gives the bird its name.

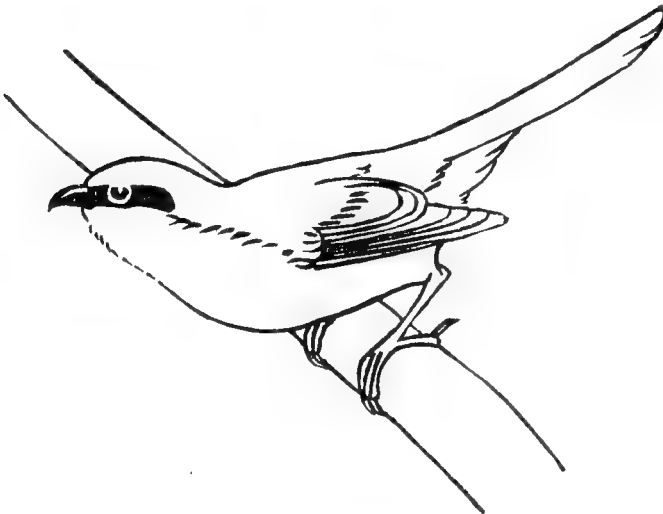
The tits are represented by several species, of which the prettiest is the long-tailed titmouse (*Acredula caudata*). Birds of this species go about in small flocks of a dozen or so, and are very pretty to watch, as they flit from branch to branch, examining every leaf and twig in their interminable search for insects.

The lesser tit (*Parus minor*) is not unlike the British tomtit, but is smaller in size. Two cole tits occur, one (*P. pekinensis*) in the vicinity of Peking and westward, the other (*P. insularis*) in North-eastern Chihli. The yellow breasted tit (*P. venustulus*) and the crested tit (*Lophopanes beavani*) also are fairly common. They are all charming little birds excessively active and cheery in disposition. They seem to love to hang upside down from the branches, but this habit is only to enable them to examine the under surfaces of leaves more freely. They are easy to keep in captivity if given plenty of room and the proper kind of food. It is one of the prettiest sights imaginable to see a tit with a sunflower seed held firmly between its feet, hammering away with its strong little beak to split it. One I owned used to dive into corners after cobwebs, returning to his perch with a long mass

in his claws, when he would busily search amongst the meshes for the insect.

In China the penduline tit is represented by a species known as *Remiza consobrina*. This pretty little bird derives its name from its habit of hanging upside down. In the male the head is grey, the back and wings buff and chestnut, the breast cream, while there is a black band across the eyes.

We next come to the butcher birds or shrikes, which are represented in North China by six species. These birds derive their name from their habit of spitting their prey upon the long thorns on the bushes in the vicinity of their nest, and leaving them there till required, thus maintaining a larder. They have been known to steal the fledgelings from other birds' nest and treat them in this cruel way. Small rodents, also, sometimes fall a prey to these fierce little birds, but in the main their food consists of grasshoppers, beetles and other insects. The great grey shrike (*Lanius sphenocercus*) is undoubtedly the handsomest of the three species. The head and back of this bird are of a fine grey; the breast white. There is a black band over each eye.



THE BUTCHER BIRD (*Lanius superciliosus*).

The wings and tail are black, the feathers of the latter being tipped with white. It is very common on the plains and in wide valleys of North China, but is seldom seen in mountainous or hilly districts.

The other five species are all very much smaller birds, and are very hard to distinguish from each other, even when in the fully adult plumage. When in the barred plumage of the immature birds, the work of identifying specimens becomes practically impossible.

The different species may be distinguished thus. Four of the five species are characterized by having red-brown tails. One of these (*L. tigrinus*) has a blue-grey head and neck, which at once distinguishes it from all the others. The upper parts are red-brown barred with black.

The other three red-tailed shrikes are *L. leucionensis* with white forehead, grey head, greyish-brown upper parts, *L. superciliosus* with chestnut head, wings and back, white forehead and white eyebrows, and *L. cristatus* with the upper parts brown and no eyebrow.

The remaining species is *L. bucephalus*, which has a grey tail, chestnut head, and upper back, white eyebrow, a conspicuous white spot on the wing and the lower back grey. In all the species the breast and lower parts are buff. I have seen some of these birds nesting in Manchuria.

The waxwing (*Ampelis garrula*) comes next to the shrikes. This is an elegant bird with unusually long wings and a fine crest. It is of a pretty fawn-grey colour, with a tendency to chestnut on the crest and mauve on the back. The eyes are surrounded with black; there is a black patch on the throat, and the tips of the dark wing and tail feathers are of a brilliant yellow. The most peculiar characteristic, and the one from which the bird derives its name, is that the secondary wing feathers are all tipped with little red waxy appendages, that look almost artificial. In some specimens the tail feathers also have these appendages. Waxwings may be seen in large flocks, especially in winter. They feed upon berries, having a great predilection for those of the mistletoe. They are noisy birds, whistling and piping continuously as they search for their food.

The Japanese waxwing (*A. japonica*) also occurs, but it is a very much rarer bird. In this species the tips of the wing and tail feathers are crimson and not yellow. It is also somewhat smaller than the other.

In North China there are several members of the thrush family, the two commonest of which are *Merula naumanni* and *M. ruficollis*. The former is of a greyish brown colour above and dirty white below. The throat and breast are chestnut spotted with black, the tail chestnut. The latter is slightly the larger, and has more chestnut on the breast, without the spots.

Both of these birds occur in large flocks throughout the winter, going northward in the spring. Other species, which have been noticed in North China are the pale ouzel (*M. pallida*), the dusky ouzel (*M. fuscata*), the grey back ouzel (*M. hortulorum*), and the grey-headed ouzel (*M. obscura*). White's thrush (*Oreocincla varia*) and the Siberian ground-thrush (*Geocincla sibirica*) also occur, but none of these are common.

In the loess gullies and foothills of Shansi and elsewhere the blue rock-thrush (*Monticola solitarius*) occurs. This bird has a blue head, neck and back, dark grey wings and tail, with bright chestnut breast, and belly.

A small rock-thrush, (*M. gularis*) is also to be found in Chihli, though I have never come across it in Shansi and westward. It has a brilliant blue head and nape, chestnut breast, belly, rump and lower back and black upper back and wings. Neither of these birds are common.

In the more arid parts of the northern provinces, and especially in the Ordos Desert, the wheatear (*Saxicola isabellina*) occurs in great numbers. It is a pretty bird with white breast and lower back, black wings and tail, having a black band like the shrikes through the eye. It nests in holes in the ground, often using still tenanted burrows of the ground squirrel.

Another species (*S. morio*), has the top of the head and neck of a dirty white, the lower parts white, tinged with reddish on the breast and fuliginous brown on the flanks, the upper and lower tail coverts white and the wings, lower tail, and upper back black. *S. oenanthe*, a third species also occurs, but the last two are not at all common.

The peculiar birds known as fork-tails come next in our list. The common North China species is *Henicurus sinensis*. Further south several other species occur. These birds keep to watery places, and may be found plentifully in the ravine bottoms in the Central Shensi loess country. Our species is a large bird with a long, widely-forked black tail. The rest of the body is pied. The legs are long, and of a pink colour.

Next to this genus comes the redstarts, two species of which are found. These are the common redstart (*Ruticilla aurea*) and the black redstart (*R. rufiventris*.) The former has a pretty grey head and black body and wings, the latter having a conspicuous white patch on each, while the lower breast, rump and tail are of a bright chestnut-red colour. As it is continually bobbing its tail and flirting its wings, the name redstart is very suitable.

The black redstart is entirely black except for the belly, rump and tail which are of a bright chestnut-red colour. This species occurs only in the more secluded valleys and ravines of the treeless hills and mountain ranges, while the other seems to prefer old temple buildings, where it builds its nest in holes in the walls. In both species the females are grey-brown, with chestnut tails.

The plumbeous water-redstart (*Phycornis fuliginosa*) is also found, but is not at all common. *Erythacus akahige*, the Japanese robin occurs along the coast of North China, but a bird that is often called the robin is the ruby-throated warbler (*Erythacus calliope*). This pretty bird is a great favourite with bird fanciers in this country, and with its dark olive-brown head, back, wings and tail, its bright crimson throat, its white belly and white markings above and below the eye it is certainly a very handsome cage bird. Its near relation the blue-throated warbler (*E. caeruleculus*) is another favourite. This bird is olive-brown above with a fine blue throat and breast, the blue patch being edged with a band of black and another of chestnut, while a chestnut patch occupies the centre. The upper part of the tail is also chestnut. Both these warblers are very sweet singers, and are favourite cage birds of the Chinese, being called respectively "Hung tien er" (Red spot) and "Lan tien er" (Blue spot).

There are five species of reed-warblers common to North China, of which the short-billed reed warbler (*Arundinax aedon*) is perhaps the most plentiful. This bird keeps to the osier beds and willow withies. Last summer I saw great numbers along the river sides in Manchuria, where they sang incessantly and with great vigour. They are very shy of being seen, however, and on the approach of anybody would immediately disappear into the rank foliage.

The eastern great reed-warbler (*Acrocephalus orientalis*) breeds in China and Manchuria, in great numbers. The three other species (*A. bestiiceps*, *A. tangorum* and *A. sorghophilus*) are all small inconspicuous birds. Besides these, willow-warblers, grass-hopper-warblers and other small birds belonging to the *Sylviidae* pass through the country on migration in immense numbers.

The next two species are what are known as accentors. One of these, *Accentor erythropygius*, inhabits the rocky cairns and summits of the highest back ranges. It is a little smaller than the thrush, and is very prettily marked, though of sombre hue. The other, *Tharrhaleus montanellus*, keeps to the valley bottoms, also in the higher ranges. This is the Chinese representative of the British hedge-sparrow.

The dipper is represented in North China by *Cinclus pallasi*, an uniformly dark olive-brown bird, which is found in Shensi. It may be seen along the streams in the rocky bottoms of the deep loess ravines, where it builds its nest under the overhanging ledges. It can dive well, from which fact it gets its name of dipper. I have never come across it elsewhere than in Shensi.

The wren (*Anothura fumigata*) is another bird found in the deep ravines. Its range is, however, much wider than that of the dipper, extending all over the mountainous districts of North and Central China.

Included in the list of soft billed birds are the timelines, an interesting group of birds characterized by their short rounded wings and their large broad tails. They are related to the mocking bird, and are also known as babblers.

The commonest of these is known as *Pterorhinus davidi*. This is a lively bird of an uniform dark olive-brown, with a slight suggestion of a blue metallic sheen on the long wing feathers. It is one of the commonest birds of the mountainous regions, and is gifted with no mean vocal powers. It may be seen in flocks of six or seven playing about in the underbrush, or scratching in the dried leaves and grass for food. It is essentially a brush bird, keeping entirely to the undergrowth and low shrubs, and never perching on the tall trees. It builds its nest in the dense thorn scrub in ravine bottoms.

A much smaller bird of the same type, and with similar habits is the *Rhopophilus pekinensis*. This bird frequents the same localities as the foregoing species. It is more prettily marked, however, having a white breast with chestnut streaks. It has a proportionately longer tail.

Pomatorhinus gravivox is another timeline, which is not only a very handsome bird, but has an unusually sweet song. It is olive-brown on the back, with chestnut forehead, cheeks and belly. The throat and breast are white spotted with black. I have only come across it in Shensi, where it is rather rare.

In Shensi, also occur two other timelines. One of these, *Trochopteron ellioti*, is about the same size as *Pterorhinus davidi*, and is of a similar general colour. The wings, however, are washed with more intense metallic blue, and the tail with a brassy yellow sheen. The other, *Dryonastes perspicillatus*, is the largest of the five, with dull plumage. These last two species do not appear to occur north of the Wei valley, and may be said to belong more to the avi-fauna of Central China.

The smallest member of this group is a little green bird, with white breast and reddish flanks, commonly called the white-eye (*Zosterops erythroleura*). It gets its name from the eyes being encircled with white. It is very common and may frequently be seen in the garden during the summer.

Next to these birds come the fly catchers, represented by several species in North China. Being denizens of the more densely wooded and brush covered areas, they are not often seen.

Most remarkable of these is the paradise flycatcher (*Terpsiphoneinei*). In this beautiful bird the adult male has the central tail feathers enormously lengthened during the breeding season. The younger males and the females are of a chestnut red colour all over, except the head and neck, which are of a fine metallic blue, almost black. The most peculiar thing is that the old males are of the same chestnut-red colour except during the breeding season, when they are white. Thus during the breeding season there are three plumages, namely, the chestnut and blue-black females, with short tails, the chestnut and blue-back young males with very long tails, and the pure white and blue-black old males with very long tails. This is not a common bird, but it has been recorded from the vicinity of Peking and also at Chin-wang-tao.

Another most beautiful bird is the tricolor flycatcher (*Xanthopygia tricolor*). This bird has a black head, upper back, wings and tail, white eyebrows, secondaries and upper wing coverts white, and bright yellow under parts, lower back and rump. The female is plain olive green above, dirty white below with yellowish rump.

The blue and white flycatcher (*Cyanoptila bella*) is also a strikingly beautiful bird, with its bright smalt-blue upper parts, black throat and breast and white belly. The female is brown. The robin flycatcher (*Poliomyias luteola*) has black or iron-grey upper parts, orange-red throat with a white patch on the wing, another behind the eye and the base of the tail white. The female is olive brown above, white below.

The broad billed flycatcher (*Alsonax latirostris*) is a small grey-brown bird, with white under parts, marked with grey on the breast; while the Siberian flycatcher (*Hemichelidon sibirica*) is much darker with heavily marked breast. Lastly the white-tailed robin-flycatcher (*Siphia albicilla*) is characterized by a red throat in the male, the rest of the bird being grey.

This list of flycatchers shows that some of the most beautiful of our birds belong to the family.

Finally we come to the swallows and martins represented by some six species, three of each. The common swallow of these parts is the eastern house swallow (*Hirundo gutturalis*), which is allowed to build in the ceilings and eaves of native houses. Both the Chinese and Mongols consider it extremely lucky to have swallows build in their dwellings, and in many places every house and tent has its pair of swallows, which build in the rafters year by year. The other two swallows are the Nipal striped swallow (*H. nipalensis*), which has a striped breast, and Tytler's swallow (*H. tytleri*), which keeps more to the wild parts.

The house martin (*Chilidon lagopoda*), as its name suggests, builds its nest in human domiciles, while the cliff martin (*Ptyonoprocne rupetris*) keeps to the rocky ravines of the mountainous districts, where it makes its nest under the overhanging rocks and in caves. It is about the same size as the swallow, but has a much shorter tail, and is of a dark brown above and white below.

The sand martin (*Cotile riparia*) nests in long tunnels, which it excavates in sandy banks and cliffs. It is considerably smaller than the crag martin, though of about the same shape and colour. When travelling in Inner Mongolia, I frequently came across regular warrens, excavated by these little birds in low banks, or even in the sides of disused wells. In places immense flocks of these birds were also seen, evidently gathered together preparatory to the migration southward.

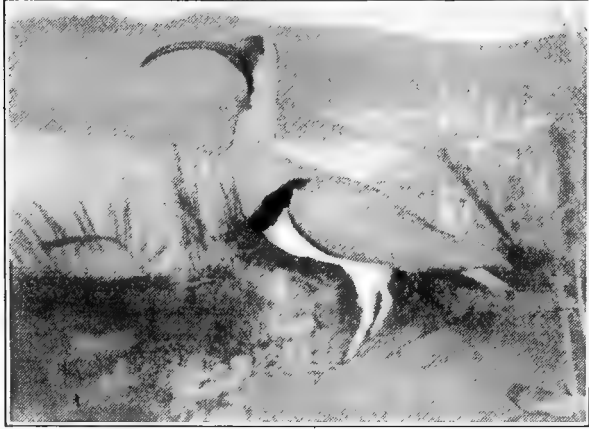
CHAPTER XXI.

THE WADING BIRDS OF NORTH CHINA.

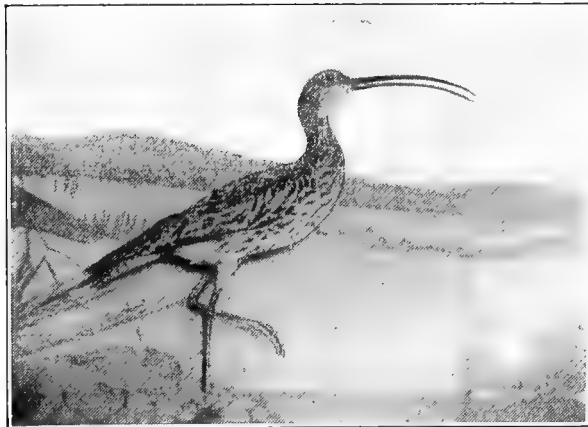
FEW even amongst those who make the gun and rod their hobby, and spend many a pleasant week-end along the river's bank or in a house boat on the fens, realize what a great variety of wading birds there is. This is doubtless due to the fact that the man with the gun, if he be a true sportsman, seldom fires at anything he does not know to be good for the pot, so that he comes to know a few species well and is often ignorant of all the rest. On the other hand the man with the rod is usually too absorbed in his float or flytackle to heed the numerous other attractions of his holiday resort. The man who derives the greatest pleasure and profit from nature's marvellous store is he, who, setting out with sight and hearing alert, is prepared to sacrifice a good bag in order to follow up and learn what he can about some unfamiliar bird that has crossed his path. And what a world of wonder will open out before him! He will be at a loss to name the numerous species he encounters. He will see strange sights which he will be unable to account for. Turning up his books he will be confused by close scientific descriptions and terms, or if they be popular ones, they will be sure to omit just the bird he is looking for. To such an one the following notes may be useful. I cannot pretend that my list will be either complete or infallible, but it may serve in assisting the local sportsman, who is interested in something other than merely how many couple he can bag, to identify and correctly name the many interesting birds he sees.

The largest wading bird common to North China is the black stork (*Ciconia nigra*). This handsome species frequents the clear streams and rivers in the vicinity of high and precipitous cliffs, in the crags of which it builds its nest and rears its young. It may only be seen in such coastal regions as Tientsin during the spring and autumn migrations. It is considerably larger than the heron, and has the head, neck, back, wings and tail of a jet black, the feathers of the head and neck being shot with iridescent hues. The breast and belly are white. The beak, face, eyes and legs are of a fine vermilion colour. The plumage

Plate XXVII.



THE IBIS-BILLED CURLEW (*Ibidorhynchus struthersi*).



THE CURLEW (*Numenius arquatus*).

of the female is more brown, and is without the iridescence. The food of this bird is small fish.

Next in size comes the heron (*Ardea cinerea*) familiar to everybody who goes in for wild fowling. It is a beautiful bird with its delicate grey feathers, white throat and neck, speckled with black and its graceful black crest. In flight it may be distinguished from the foregoing species by the way in which it holds its head back over its shoulders. The stork keeps its neck stretched out at full length in front, as also do the cranes.

Several other species of heron occur in North China. The rarest of these is the egret (*Ardea garzetta*), a perfectly white bird, carrying on its back those rare plumes commonly known as "ospreys." In size this species is very much less than the common heron, but the two are very similar in shape. As stated in a previous paper, this elegant little wader is fast becoming extinct, owing to the high price set upon its plumes. The worst thing about the collecting of these plumes is that they are most valuable when the young are being fledged, and parent birds are nearly always shot just at this time, so that the young are left to starve. I have seen but two of these birds in a wild state from the time, many years ago, when I first began to distinguish one species from another.

A very beautiful bird is the purple heron (*Ardea manillensis*), which may sometimes be seen in this region. The plumage of this bird is a wonderful combination of greys, purples, buffs and browns. It is somewhat smaller than the common heron. Common in the marshes of North China is a very small bird belonging to this family named *Ardetta sinensis*. It is like a small bittern in appearance, being of a buff colour streaked with black. One often puts it up when out snipe shooting. It occurs all over North China. Another rarer species, (*A. eurhythmia*) also occurs. This bird has the crown, nape and back of a dark brown, the throat, cheeks, chest, belly and legs of a buff, with grey-buff wing coverts. I found this bird rather common in Manchuria. The well known bittern (*Botaurus stellaris*) is the next member of the great order *Herodiones*, to which the foregoing species belong. This is essentially a bird of the marshes, where owing to its colouring and markings, it may stand amongst the reed stems and completely escape detection.

Another member of this order is the night heron (*Nycticorax griseus*). This bird is about the same size as the bittern, and is remarkable for its conspicuous plumage. The top of the head is black with two long white plumes passing backward over the neck and shoulders. The face, side of the head, neck, breast and belly are white, the back is black and the wings a dark blue-grey. The beak is green and black,

the legs yellow and the eye red. This bird prefers wooded districts, building its nest in low trees. It does its fishing by night, sleeping during the day, hence the name night heron.

Another group belonging to this order are the ibises, which are represented in North China by a very beautiful bird, the Japanese ibis (*Nipponia nippon*). This bird has fine white plumage, tinged with a brilliant orange-pink, especially on the under surface of the wings. With its long curved beak, pronounced crest and naked forehead, face and throat, it is a very peculiar looking bird. It makes a great noise, uttering a harsh croak, even louder than that of the raven. It builds its nest in trees, and feeds chiefly upon large water snails. It is very common along the Wei Valley in Shensi, and I have seen it as far north as Tai-yuan Fu in Shansi, while I am told, that it breeds on the banks of the Liac River in Manchuria.

The last member of this order is the spoonbill (*Platalca leucorodia*), so called on account of its peculiarly shaped bill, which flattens out at the end like a spoon. In colour this bird is pure white and like many others of the order has a pronounced crest. In size it about equals the common heron. I have seen large flocks of these birds during the migrating season, and noticed that they assume the V shape formation, so characteristic of aquatic birds in general. They are very shy and keep to the most uninhabited regions, such as the very heart of wild and impassable marshes.

The next order of wading birds is *Fulicariæ* which includes the rails, moorhens and coots. Of these the moorhens and coots cannot, strictly speaking, be called waders, for they are expert swimmers and spend most of their time on the surface of deep water. Even the water rail swims every whit as much as it wades, so that we might pass over the whole group, which in any case is well enough known.

There are two species of crane common in North China, namely, the common crane (*Grus lilfordi*) and the demoiselle crane (*Anthropoides virgo*), both of which birds occur in huge flocks. The common crane is much the larger, being of a dark grey colour with handsome tail and wing plumes. It has a naked red crown and a white band extending down either side of the neck from the eye. The demoiselle crane is also of a pretty grey colour on the body with much darker head, neck and breast. It has two white tufts growing backwards from behind the eye. The tail feathers are long and painted. Both of these species may be seen in great numbers upon the Mongolian Plateau.

We next have to consider the great order *Limicolæ*, which includes the plovers, the sand pipers, the snipe, the curlews and all the rest of the smaller wading birds.

There are ten plovers common to North China, namely, the grey-headed plover (*Microsarcops cinereus*), the crested plover or lapwing (*Vanellus vanellus*), the golden plover (*Charadrius fulvus*), the little ringed plover (*Aegialitis minor*) the larger ringed plover (*Aeg. placidus*) the sand plover (*Aeg. cantianus*), the larger sand plover (*Aeg. geoffroyi*), the Mongolian plover (*Aeg. mongolicus*), the dotterel (*Charadrius veredus*) and the pratincole (*Glareola orientalis*). These are all well known to the sportsman, for he will continually meet them. The grey-headed plover is the largest. It is of a grey colour above, white below, with black and white wings and tail, and a conspicuous black band across the breast. The beak is yellow at the base, black at the tip, and there are yellow fleshy appendages on either side of the face. In flight it resembles the lapwing, to which bird it also bears considerable resemblance in its habits.

The lapwing is a particularly well known bird. Its black plumage has a fine metallic sheen changing from a rich green to coppery red in the sunlight. The lower breast and belly are white, the under tail-coverts of a rich chestnut-fawn colour. Its name is derived from its habits of pretending to be wounded, and flapping along with an apparently broken wing in order to draw the intruder away from its nest.

The golden plover is a graceful bird, about the size of a snipe, with fine golden-green plumage thickly speckled with black. I have yet to see the sportsman who will let a golden plover pass if he could bag it, for its flesh is excellent, ranking, some people think, even higher than that of the snipe itself.

The members of the genus *Aegialitis* may be distinguished from one another thus:—

Lesser sand plover: Chestnut on back of head; incomplete neck ring.

Greater sand plover: Chestnut head, neck, and breast. No neck ring.

Lesser ringed plover: complete neck ring, grey-black and white back and wings; no chestnut colour; with a white ring round the neck.

Greater ringed plover: the same as the lesser ringed plover, but larger in size.

Mongolian plover: like the greater sand plover, but with black gorget or neck ring, and of a smaller size.

The dotterel (*Charadrius veredus*) is also classed with the plovers and is certainly very like them. It may be recognised by its whitish buff head, chestnut breast and upper flanks, bordered below by black, grey-brown back and long legs. It is, however, very rarely seen. It

is believed that the dotterels fly from their winter resort in the south to their breeding grounds in Arctic regions in one continuous flight, without either rest or food.

Closely allied to the plovers are the pratincoles, remarkable for their swift swallow-like flight. One species (*Glareola orientalis*) is very common in North China, especially round Tientsin, where it may be seen in swarms flying over the reeds, chasing and catching the grasshoppers and other insects. In appearance this bird is not unlike the dotterel, though it has a short thick beak, wide mouth, very long wings and a swallow tail. In colour it is of a dark grey-brown on the head, nape, back, wings and breast, shading off into white on the belly and rump. The throat is fawn, bounded by a black line as in the chukar, or red-legged partridge. The lower back and under wing surface are chestnut. These graceful birds offer very sporting shots, but the flesh, though without that coarse flavour, so often noticeable in water birds, is slightly bitter.



THE AVOCET (*Recurvirostra avocetta*).

Next to the plovers come the avocets, represented in North China by the common avocet (*Recurvirostra avocetta*). This is a most graceful bird with pied plumage, long slender black legs, webbed feet and a long thin beak with a strong upward curve. In size it about equals the lapwing, though it is of a very much more slender build.

A very handsome wading bird that is to be found in North China, though it keeps to the coastal regions, is the Japanese oyster catcher, (*Hoematopus osculans*). This bird is somewhat larger than a pigeon, and is conspicuously coloured, having the head, neck and back of a jet black, wings and tail black and white, and breast and belly pure white. The legs are of a dull red, the long beak orange. It derives its name from the fact that it feeds upon bi-valve molluscs, which it prises open with its bill.

In the rock-strewn valleys of the mountainous regions of the interior, another closely allied form exists, namely, the ibis-billed oyster catcher (*Ibidorhynchus struthersi*). This interesting bird forms a connecting link between the oyster-catchers and our next genus, the curlews. In colour, it is of a delicate mauve-grey above, with white breast and belly. It has a black face, with a long crimson bill, shaped like that of the ibis; hence its name.

The legs are of a pretty mauve colour, and there is a broad black band across the chest. These birds, in their native haunts, so exactly resemble the grey stones and boulders, that it is almost impossible to detect them. When they fly, they utter a plaintive call like that of the lapwing. They are never seen in marshy country, and are only partially migratory.

Every one is familiar with the curlew (*Numenius arguatus*) and the whimbrel (*N. variegatus*). These birds are very much alike in plumage and appearance, the whimbrel being but a small curlew. They are very good eating and offer good sporting shots, so that few sportsmen refuse to take them when the chance offers.

The grey phalarope (*Phalaropus fulcarius*) is another bird that may be seen in the marshes, though only during the migrations. It may be recognized by its lobed feet, not unlike those of the coot. It is about the size of the golden plover, and is remarkable for the seasonal change in its plumage. In winter it is grey above, white beneath; in summer, dark grey-brown above and chestnut beneath. When in summer plumage it may easily be confused with the dotterel, which it very much resembles in shape and in flight. It has a short beak like the plovers.

I have never come across the ruff (*Totanus pugnax*), though we certainly have the two red-shanks (*T. calidris* and *T. fuscus*) and the common sand-piper (*T. hypoleucos*), all members of the same genus, besides a great many others. The red-shank is somewhat larger than the snipe, and may easily be recognized by its long, conspicuously orange legs, its fine white breast, and speckled brown upper parts.

The common sand-piper is the little bird known out here as the snippet. The latter is a purely sporting term used loosely for many small snipe-like birds. Another bird that often receives this name is the red-necked stint (*Tringa ruficollis*), a small snipe-like bird that often deceives the beginner as to its identity. This is the little fellow that goes about in small flocks of ten or a dozen, and settles on the flat muddy stretches where there is no cover.

Another member of the same genus is the dunlin (*T. americana*), which, however, has a longer beak, is darker in colour, and slightly larger. It keeps more to the sea-shore, and is seldom met with inland.

The black-tailed godwit (*Limosa melanura*) is another of the waders, which passes through during the migratory season. This is a bird about the size of the whimbrel, but having a long straight beak. It is of fawn-grey and brown colour with black flight feathers, white axillaries and a black tail, the base of which is white. The legs are long and the central toe has the nail curved upward and serrated. The feathers of the head and neck are tinged with chestnut. A second smaller species occurs, which is barred on the breast and back, and has very much more chestnut on the head and neck.

The descriptions of all these birds refer only to the adult male. As it frequently happens that the females and young have differently coloured plumage, the sportsman will often secure birds that do not answer to any of these. He must then arrive at an identification by a process of elimination, though without reference to colour. He will have to go more by shape, length of leg and beak, and so on.

Lastly we have the woodcock and snipe. I have already dealt with the latter in a separate paper.

My experiences with the woodcock, (*Scolapax rusticola*) has not been great, in fact I have run across it in only two places, namely, in the wooded area west of Tai-yuan Fu in Shansi, and in the mountains west of Kwei-hua-ch'eng further north in the same province. In both of these districts it is fairly plentiful in spring and autumn, but rather shy and difficult to shoot.

It is occasionally shot round Tientsin by local sportsmen, and I have seen it for sale in the French market.

CHAPTER XXII.

MISCELLANEOUS BIRDS—PICARIAN BIRDS.

THE birds of this great order differ from the perching birds mainly in the structure of their feet. The majority of the species have the toes arranged two pointing forward and two directed backward. In those that have three in front and one behind the feet are usually small and weak, and the metatarsal bones short. The order includes the wood-peckers, cuckoos, humming birds, swifts, kingfishers, rollers and others, and is well represented in the Chinese avi-fauna. They form a most interesting group so that it would be well to consider them in some detail.

Much the largest of all the woodpeckers in this country is the great black woodpecker (*Picus martius*). This is a very rare species, occurring only in the wilds of the wooded mountain areas. It is about 18 inches in length, with jet black plumage, except for a very conspicuous crimson crown. It is remarkable how many of the *Picidae* have these brilliant crimson patches on their heads, which, however, is usually absent in the females. The beak of the great black woodpecker is very powerful, and is flattened vertically at the tip to form a most effective implement in the drilling of holes in tree trunks. Mostly this drilling and chipping is carried out in the surface of soft and decaying wood in the search for insects, upon which the bird feeds; but when the nesting season comes on, the parent birds excavate deep holes, sometimes many feet in length. I have known of such holes being made in the green wood of living trees. The energy of woodpeckers is exuberant, and there are few birds more interesting to watch.

Next in size comes the grey-headed woodpecker (*Gecinus canus*). This is a very common bird, occurring in every locality. It seems to be non-migratory for it may be seen at all times of the year. Considering

the fact that woodpeckers are insectivorous birds, it might be wondered where they get their food from during our cold North China winters. That they do get insect food is known from the fact that stomachs of these birds, examined in winter have been found full of ants. I once made a rough estimate of the number of ants a woodpecker disposes of in a year, and got a result of nearly three hundred thousand (300,000). This does not include the numerous other insects that go to make up its bill-of-fare. Another thing that doubtless helps these birds through the winter is that at a pinch they can subsist on the kernels of wild apricots and peaches.

The process usually used in catching insects is to drum upon some infested trunk with the beak. In the case of ants, this is effective in causing the irate and warlike little insects to swarm out of their holes to attack the invader, when they are promptly licked up by the long barbed and sticky tongue. Other insects are literally dragged out of their borings by the same deadly weapon.

In colour the grey-headed woodpecker is green on the body and wings, grey on the neck and head, with a fine crimson crown and a dark band on either cheek, running from the base of the beak to behind the lower jaw.

Another closely related species is the Yang-tze green woodpecker (*G. guerini*), which differs from *G. canus* in having more black on the nape and head and in being greener throughout.

The Chinese pied woodpecker (*Dendrocopus cabanisi*) is another common woodpecker. It is closely allied to the common spotted woodpecker (*D. major*), but has black instead of white scapulars. The latter bird also occurs. It is black and white on the head, back, wings and tail. The breast is light brown or dirty white. The back of the head is crimson, the belly and rump bright rose.

The rufous bellied pied-woodpecker (*Hypopicus poliopsis*) resembles the foregoing species, but has a red-brown breast.

As far as I know the smallest woodpecker in these parts is the spark-headed woodpecker. Its scientific name *Iyngipicus scintilliceps*, seems to suggest some connection with the wryneck (*Iynx*). This pretty little woodpecker is pied above, brown on the breast with black streaks, and has two crimson spots on the back of the head. It is somewhat smaller than a sparrow.

The next Picarian bird is the wryneck (*Iynx torquilla*), sometimes known as the cuckoo's mate. This little bird appears in spring just before the cuckoo, to which it is closely related. It is of a brown colour

covered with mottlings, bars and striations, of a darker shade. Like the woodpeckers it builds its nest in holes in trees, but it does not excavate these itself. It has a delicate narrow bill eminently unsuited to such an undertaking.

Closely following the wryneck comes the cuckoo, not only in its north bound migration, but also in the position to which ornithologists have assigned it in their arrangements and classification of birds. The cuckoo is too familiar a bird to need any description. There seem to be two distinct species recognisable by their calls. One is the common cuckoo (*Cuculus canorus*), which gives the call so familiar to all of us. The other, the Asiatic cuckoo (*C. intermedius*) keeps to the wooded areas and utters a call which can only be rendered by the syllable *whoom whom whom* oft repeated in a low key with an indescribable resonance. I found both species very common in the Manchurian forests, but they were unapproachable. Indeed, excepting on one occasion, I have never succeeded in securing any but immature specimens.

It is well known how small birds will mob a cuckoo when they find one in the open. It has been found that the male cuckoo deliberately seeks this mobbing so as to draw the small birds away from their nest, thus giving the female a chance of depositing her egg in the nest of a suitable host.

Skipping a number of Picarian families, which do not seem to be represented in North China, we come to the swifts and nightjars. A great many people seem to think these are classed with the swallows and martins. This popular error is not to be wondered at, for a swift certainly bears a remarkable resemblance to a martin. One look at the feet, however, and all doubt is dispelled. Small, sharply clawed, feathered to the toes and of awkward shape the foot of a swift, and to an even greater extent, that of the nightjar, is certainly not that of a perching bird. As a matter of fact the swift family is called *Micropodidae*, which means "small feet." The three members of this family in North China are the white-rumped swift (*Cypselus pacificus*), the North China swift (*C. pekinensis*) and the spinetailed swift (*Acanthyllis caudata*). The North China swift is a well known bird, being a regular summer visitor. It rears its young in holes in the eaves of temples, gate towers and other grand old-buildings. In the evenings, when it is most busy, its shrill whistling fills the air, and is a most pleasant sound. Like the swallows the young can fly as soon as they are fledged, though occasionally a young bird, which has left the nest too soon, may be picked up from the ground. Swifts find great difficulty in rising from

the ground, doubtless due to the feebleness of their legs and feet, which prevents them from giving the initial spring into the air.

The white rumped swift according to David breeds in the hills west of Peking.

The spine-tailed swift is a very large handsome bird, of a dark brown colour with a whitish back.

The nightjar (*Caprimulgus jotaca*) is an interesting bird, found only in the mountainous areas. I have come across it in Shansi and Manchuria only, though doubtless it occurs in the other provinces. It makes a peculiar noise like the knocking together of two pieces of wood. Perhaps this is what gives it the name of nightjar. Another name is nighthawk and a third very common one is goatsucker. The last has come from the fact that the bird has frequently been seen to hang around the udders of goats so that it has become a popular belief that it sucks the milk. As a matter of fact it is flies that the bird is after. Of a beautiful brown grey colour, closely pencilled and barred, the nightjar is a handsome bird. Like the swift it has an enormous mouth and long graceful wings. It lays two eggs on the bare ground in the underbrush, where it rears its young. In tropical countries there are some very beautiful members of this family.



THE HOOPOE (*Upupa epops*).

A bird that never fails to call forth admiration is the hoopoe (*Upupa epops*). In Shansi and westward this is not a rare bird, though I

believe it is less common in these parts. It derives its name from its peculiar call, which may be rendered *hoo poo poo*. The Chinese name "pu pu tze" is also descriptive of the call. The colour and markings of the hoopoe are very handsome, but its glory lies in the wonderful crown of golden feathers that adorns its head. It nests in holes in cliffs, feeding upon grubs and insects, which it catches with its long bill. With this it prods the soft mould as do the snipes and woodcocks.

Not distantly related to the hoopoe are the kingfishers, a small variety of which, *Alcedo bengalensis*, is familiar at least to all sporting men out here. This is closely allied to the species found all over Europe and temperate and even tropical Asia. It is a beautiful little bird with its bright blue head, back, wings and tail, and its chestnut breast. It may often be seen skimming along the banks of streams and canals with its bright colours flashing like living gems in the sunlight. The Chinese use the feathers of this bird in the manufacture of trinkets and hair ornaments, the brilliant blue being an excellent substitute for enamel. I am told that the natives who hunt for these feathers, catch the birds alive and after they have taken such of the plumes as they require, restore them their freedom.

The only other kingfisher that I know of inhabiting North China is a very handsome species known as *Halcyon pileatus*. This bird has a black head, dark purple and blue back and wings, a black tail, white throat, chestnut breast and belly and bright red legs and bill. It frequents rivers and marshes, and may even be seen along mountain streams. It is about the size of a thrush.

One should not leave the Picarian birds without mentioning one other species, the Chinese broad-billed roller (*Eurystomus calonyse*). Whether this bird inhabits North China or not, I have not yet ascertained, but I found it very common, though hard to secure, in Manchuria. It is certainly one of the handsomest, if not the handsomest bird of these latitudes. Its plumage is a wonderful combination of blues, ranging from an emerald-blue on the back to the most ultra of ultramarine on the tail and what milliners call electric blue on the wings. The head is black and the throat pale mauve-blue. In sharp contrast to these gem-like colours are the bright orange red beak, crimson legs and almost ruby coloured eye. The beak is large, powerful and hooked at the tip. The wings are long; the tail square. The bird keeps to the tops of the highest trees, feeding upon the large insects, which it dexterously catches in mid air. It makes a great noise resembling that of the jay and other members of the crow family.

COLUMBAE.

Passing over the parrots, the birds of prey, the herons and the ducks, we come to the dove family, which includes the pigeons, doves and, according to Ogilvie Grant, the sandgrouse. The last forms a connecting link, through the pigeons, between the waterfowl (ducks, etc.) on the one hand and the game birds (true grouse, pheasants, etc.) on the other.

Columbae is not a very large order, though its members, judging from the vast numbers in which they occur, seem to be eminently successful in the struggle for existence. One of the commonest members of the family is the rockdove (*Columba rupestris*). Birds of this species make their homes, as the names suggest, in rocky ravines and loess gullies, wherever they may find a shelf broad enough to deposit their eggs. In winter they foregather in great flocks, sometimes numbering many thousands, and scour the country side for food. At such times they offer excellent sport, and one may either take them singly as they pass and repass overhead, or else pot them as they feed. Of course this latter method does not appeal to the finer sporting instincts, and is only excusable on the plea that the birds are needed for food, and that cartridges are too hard to secure in the interior to waste upon difficult and doubtful shots. The rock dove is to all intents and purposes just a common blue pigeon. It differs from its European cousin in having a broad white band across the tail.

The turtle dove (*Turtur orientalis*) is another member of the same family, which is rather plentiful in the northern provinces. It keeps to the well wooded areas, where it nests in low trees, building little more than a loose platform of twigs and pine needles. Two eggs are usually deposited at a time, which is the case with all the pigeon family. During the mating season the males may frequently be seen to fly upwards from the woods attaining an altitude of a hundred feet or more above the tree tops, then spreading their wings they sail gracefully down again, and are lost to view in the dense foliage. There are few sounds more romantic than the mating *coo coo* of the turtle dove, and none more reminiscent of the pine woods.

Another dove (*T. risorius*) occurs more on the plains, where it frequents groves and orchards. This species is lighter than the turtle dove, and has none of the markings on the back. It has a plain black band or collar on the neck, which in the turtle dove is speckled with lavender. Both these birds, but more especially the latter offer good sport, when nothing else is to be had.

From a sporting point of view the first of these miscellaneous species should have been the pin-tailed sandgrouse (*Syrhaptes paradoxus*). Properly speaking this is not a Chinese bird, but is only an occasional visitor. Its true home is Mongolia, Siberia and the Steppes of Central Asia, whence it invades South-eastern Europe, North China and other neighbouring countries. About the size of a pigeon, which it somewhat resembles in build and shape, it is a handsome bird of a sandy colour with pretty markings. The female is barred; the male spotted, the latter also having a reddish orange face; while in both sexes there is a broad black band across the chest. The feet are very short, thick and padded on the soles. They are also thickly feathered so that they resemble in appearance those of a rabbit. The wings are long, the first flight feathers tapering away to a fine point. This is also the case with the tail feathers, from which fact the bird derives the first part of its name, the second part, as might be supposed, referring to its partiality for sandy places.



THE PINTAILED SANDGROUSE (*Syrhaptes paradoxus*).

Sandgrouse are sporting birds, well beloved of local shooting men. They go about in large flocks, fly very fast and require a deal of killing. They are given to fighting and in seasons when they are plentiful excellent sport may be enjoyed with them. Sometimes they keep very high and out of range, but this is only when they are on long distance flights. Usually they keep low and offer splendid marks. They only come south in winter when severe weather (not cold) is prevalent, and heavy falls of snow cover their feeding grounds in Mongolia. I have seen them in large numbers on the Mongolian Plateau just north of Kalgan as late as the end of April, and singly or in pairs a little further north in the middle of summer. The furthest south I have seen them is on the Tai-yuan Fu plain (Lat. 37° degrees N.), though whether they ever get further south I could not say.

The few times I have had a chance of shooting these birds, have been during journeys in North Shansi and Mongolia, when an occasional flock has passed by on whistling wings. I am told that a good way to hunt them is for three or four sportsmen to station themselves at wide intervals round the spot where a flock has been found feeding. The birds keep on circling round the spot, and so continually offer a mark to one or other of the guns. One party travelling in North Shansi in December 1912, reported great numbers of these birds, stating that they sometimes shot as many as thirty and forty brace a day. The last really extensive incursions of these birds into North China occurred in the winter of 1907-08. On that occasion local sportsmen were able to get good shooting simply by walking the birds up. The flesh is darker than that of the game birds.

AQUATIC BIRDS.

Under this heading we have a number of species belonging to several small orders, and the ornithologist must excuse my classing them together.



THE CORMORANT (*Phalacrocorax carbo*).

The cormorant (*Phalacrocorax carbo*) occurs wild in North China. This bird is well known on account of its being used by the Chinese in

the capture of fish. It belongs to the same family as the pelican, which latter bird does not, as far as I know, come as far north as these districts. The cormorant is an eminently ungainly bird out of the water. It is an excellent diver, however, and when under water displays a wonderful grace. I once saw one being fed in a large glass tank in the London Zoo, and the way it darted about after the fish was a sight I shall never forget. In less time than it takes to write every one of the hundred or so little fish placed in the tank had disappeared down its hungry gullet. I have since seen them at work catching fish in the Chihli lakes. Though of a black colour the feathers have a fine metallic sheen, which in conjunction with the bright emerald green eye, light silvery crest and graceful beak, does much to redeem the awkward appearance of the bird.

The cormorant builds its nest on low trees in marshy and watery districts, laying from three to six eggs. The young feed from their parents' crops by thrusting their heads down the gullets of the latter.

The other aquatic birds, which we have not yet considered are the rails, coots, gulls and grebes. The rails are represented by a species known as *Rallus indicus*. This is an inconspicuous brown bird, about the size of a spring chicken. It skulks in the reeds and grasses of the marshy districts. It is seldom seen as it hardly ever leaves cover. It has long legs and toes, a short beak, and short tail. I have not come across the corncrake or landrail in North China, though in North Shansi I found a very much smaller variety of the water-rail type, which I have been unable to identify.

The moorhen (*Gallinula chloropus*) and also the coot (*Fulica atra*) are both well known to the sportsman. The first is a small dark grey bird with long green legs and slightly lobed toes, and a red beak. There is a peculiar naked disk of flesh upon the forehead, being a continuation from the base of the beak. The coot is about twice the size of the moorhen, has plumage of the same colour, but the toes are very much more lobed. The beak and face-disk or shield are of fine ivory white. Both birds are very common in marshy districts, and breed in this country.

In the vicinity of Tientsin several species of gull are to be seen, which have found their ways up from the sea coast to feed in the marshes and lakes of the flat lands. Most conspicuous amongst these are the terns, one of which *Sterna fluviatilis* follows up the large rivers and may be found right in the interior. It has a black head, grey back and white under parts, with a swallow tail.

Besides this species, the black tern (*S. leucoptera*) has also been recorded, and I have often seen the lesser tern (*S. sinensis*). Then there are the common laughing gull (*Larus ridibundus*) the pink-legged herring gull (*L. cachinans*) and the thick-billed gull (*L. crassirostris*) specimens of which I have recently secured in the vicinity of Tientsin.

The albatross (*Diomedea albatrus*) has also been secured in Chinese Seas, and I have seen what I suspect of being the smaller sooty albatross (*D. nigripes*).

Lastly we come to the grebes, of which the most uncommon is the great-crested grebe (*Podiceps cristatus*). The shape and build of this bird have become very much modified, so that it is pre-eminently adapted to swimming both on and under the surface of the ponds and lakes where it makes its home. The most striking feature is the head, which, with the hornlike tufts and broad fringe or beard, gives the bird a most grotesque appearance. On this account the Chinese call it "Lung tou" (*Dragon head*). Its wings are so small that it is only by beating them very rapidly that it can fly. This difficulty in flying causes it to leave the water with great reluctance. When frightened it dives and swims under water for considerable distances. The feet are unique, having the appearance of a three-lobed leaf. The toes are so arranged as to fold up like the ribs of a fan as the foot is drawn up after each stroke, thus offering the minimum resistance to the water.

Another species of grebe is to be found, namely the dabchick or little grebe (*P. philippensis*). This pretty little bird is to be found everywhere, and when other birds have passed on northward it may still be seen disporting on the lake surfaces or busily searching for food amongst the reeds. Grebes, like the coots and moorhens, build their nests upon the surface of the waters, anchoring them to some staple object such as reeds or the half submerged limbs of trees. The mother, on going to feed, always covers up the eggs, when the nest is indistinguishable from any other mass of floating debris. A comparatively large brood of chicks is usually reared.

A third species also occurs. It is about the same size as the last, but the male is of a jet black colour, with white breast and a chestnut tuft on either side of the head. Its scientific name is *Podiceps ruficollis*.

CHAPTER XXIII.

THE REPTILES OF NORTH CHINA, MANCHURIA AND MONGOLIA.

As a rule reptiles in North China and the neighbouring countries are conspicuous by their absence. One may travel for days on end and see nothing more than an occasional lizard, even in country where insect and bird life is abundant, and where the collector may find his traps full every morning of interesting mammals.

What, one asks, is the cause of this? Why have lizards and snakes failed to establish themselves in these countries in numbers, as they have done elsewhere? How is it that the desert areas of Mongolia, and the forested districts of Shansi, and the Western provinces, do not show such a variety of reptiles as do other deserts and forests of the world?

The answer to these questions may be found in a study of the climatic conditions. It is not altogether the lack of moisture, though this affects other branches of the cold blooded vertebrates, but it is more the severity of the winters that has so handicapped the reptilian fauna in its struggle for existence in these countries.

Though it is a well established fact, that snakes and lizards can go long periods without food, there is yet a limit to their endurance in this line; nor do they seem so well adapted to undergo periods of suspended animation as are the Batrachians, (frogs, toads, newts, etc.). They might manage (in Manchuria they undoubtedly do) to survive a much longer period of suspended animation, were there more moisture, but the dryness of the North China and Mongolian winter is proverbial, and only a very few species have been able to survive the triple process of freezing, starvation and dessication.

Very little work has been done on the reptiles of North China and the neighbouring countries, chiefly because this field of research offers such small results. It is probable, therefore, that there are still some undiscovered species, and it might yet pay some one to go into the subject.

In the course of my various journeys I have come across only twelve distinct species belonging to the class *Reptilia*.

Of these, seven are snakes, three are lizards and the remaining two are turtles.

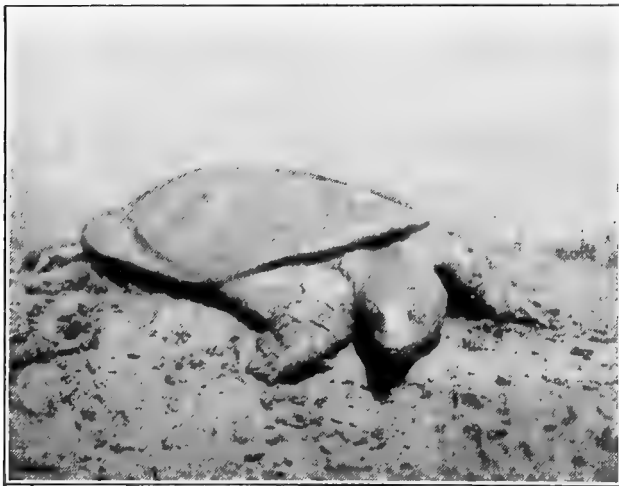
There is no questioning the fact that snakes are more instinctively dreaded and detested by human beings than any other class of animals. One's fear of them is inherent, being one of the few original instincts which civilization and progress have failed to suppress. It is also remarkable, how strongly this instinct is developed in other orders of the mammalian kingdom. I once placed the dead body of a snake before a bear-cub, which I have in my possession. Being short sighted, the little fellow came up to smell the thing. At the first sniff he shot upwards and backwards as though on springs, snorting with fear. He could have had little, or no experience with snakes, being very young, and only just taken from his mother; yet there was planted in his breast a perfect horror of these reptiles, coupled with the instinctive knowledge of just how to avoid that deadly blow, which should, in the ordinary course of events, have followed his blunder in smelling so dangerous a creature.

So with man; his first instinct on seeing a snake is either to kill it or run. Even when one is thoroughly used to handling snakes, and has lost all fear of them, they still may cause a sudden panic when encountered unexpectedly, and one gives the same quick backward jump, as did the little bear. The reason for this, of course, is the death dealing nature of the serpent's bite, it's deadly accuracy of aim, and it's marvellous rapidity, all coupled with a treacherous lurking nature, so difficult for animals and the bare-legged savage to guard against.

Fortunately North China is almost free from poisonous snakes. Of the seven species, one only is venomous, and that one is extremely rare. This species is the Halys viper (*Ancistrodon intermedius*), which may easily be recognised by the thickness of its body and its wicked looking short head and upturned nose. The genus is represented by a species in Siberia, another in the Himalayas, a third in Ceylon, and one in Manchuria. It is also represented by several species in North America;—the well-known and deadly copperhead belonging to this genus. By holding a viper by the neck, so that it cannot turn and bite, and prising open the jaws, two enormous fangs are displayed, growing downward and backward from the upper jaw. These are the deadly weapons which cause it's kind to be so cordially hated by all living creatures. The Chinese viper is of a dull uniform grey, sometimes with, and sometimes without any markings. A second species (*A. blomhoffi*) is found in Manchuria. It is of a pretty chestnut fawn, marked with buff and blue-grey lines and dots. Some are almost

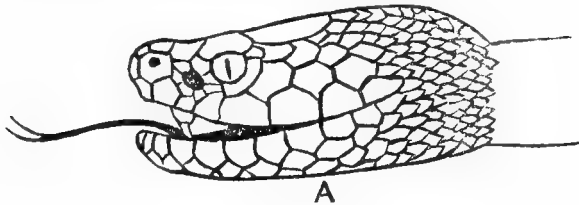


A PAIR OF GREEN WATER-SNAKES (*Tropidonotus tigrinus*).

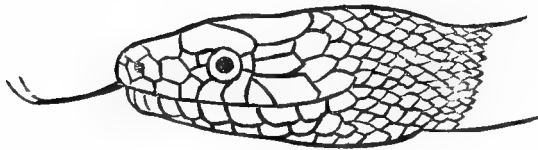


THE CHINESE MUD-TURTLE (*Trionyx sinensis*).

black. Neither of these species reach a great size, usually being about two feet in length. The Manchurian species is very common. I came across them frequently last summer, when I had a startling proof of the soundness of my rule in always treating a snake as a poisonous variety until I have examined its fangs and found it harmless. For the first part of my stay in that country I came across only harmless black and brown snakes, with the result that I came to the conclusion that there were no poisonous kinds. Under this impression I frequently went about the woods with low shoes and no stockings, and sometimes even bare-footed. One day a snake darted out of the path ahead of me into the thick brush. Though exactly the colour of several harmless ones I had caught, it struck me as being unusually thick in the body, so that when I came across another a few minutes later, I caught it by putting the butt of my gun on its head and picked it up by the neck. Next moment I realized that I had a deadly viper in my hands, as I saw the ugly head, gaping jaws and poison fangs. Fortunately I had a little brass wire in my pocket, and I slipped a noose over the reptile's head and carried it back to camp. After that I always wore high boots or putties.



A



B

- A. HEAD OF POISONOUS SNAKE (*Viper*).
B. HEAD OF NON-POISONOUS SNAKE (*Watersnake*).

The commonest snake in North China is the coluber (*Coluber dione*), a species which very much resembles the viper in appearance. It is found in Shansi, Shensi, Kansu, Mongolia, North and West Chihli and also in Manchuria. It varies considerably in colour,

according to the nature of the country it inhabits. In the Ordos Desert and the loess country of Shensi, Kansu and Shansi it is of a light brown covered with markings of a darker colour. In the grass lands of Inner Mongolia it is of a grey brown. In the forests of Shansi and Manchuria it is even darker in colour, and the markings are almost obliterated. An examination of the mouth of this and other non-poisonous snakes, will show several rows of very small sharp teeth, pointing backward, and an entire absence of anything like fangs.

It is often stated that snakes cannot disgorge anything that they have once commenced to swallow, owing to the backward slant of their teeth. If this statement is true in regard to other species, it is certainly not the case with these non-poisonous snakes, for there are many instances of their disgorging their prey.

The coluber reaches a length of from three to three and a half feet. It lays a large white egg, with a flexible tough shell or skin. The young hatch out in about three weeks.

In marshy districts in Chihli there is a very pretty snake marked with longitudinal lines down the whole length of its body. It is the snake commonly found round Tientsin. Whether it is what is known as the four rayed snake, and is referable to the genus *Coluber*, or whether it represents the North American garter-snake, in which case it would go into our next genus, *Tropidonotus*, I am not in a position to say.

The green or olive water snake (*Tropidonotus tigrinus*) is very common in North China, and is perhaps the most beautiful of the snakes of this country. It is of a bright sap-green colour above, with large vermilion patches extending in pairs from the head down either side of the body, growing smaller and finally vanishing as they reach the tail. It frequents river banks, streams and even marshes. It is perfectly harmless.

In Manchuria, this genus is represented by a very large snake, the black water-snake, (*Topidonotus vibakari*), which is extremely abundant in the forest country. These snakes vary in colour, some being perfectly black above, with light yellow markings on the belly, others being black with brilliant light yellow bands all over. The young are often of an olive brown colour, with white patches on the neck behind the head, so that they can hardly be distinguished from the common British species. They attain a great size, one specimen measured by me being 5 feet 1 inch, while the natives told me that they reach 10 feet in length, with the thickness of a man's arm. I

have the part of a dried skin which measures four and a quarter inches in width. Allowing for shrinkage in drying, this would give a circumference of at least five inches, probably more. A specimen that measured four feet seven inches, had a circumference of three inches, so that the length of the snake from which my piece of skin was taken can be imagined.

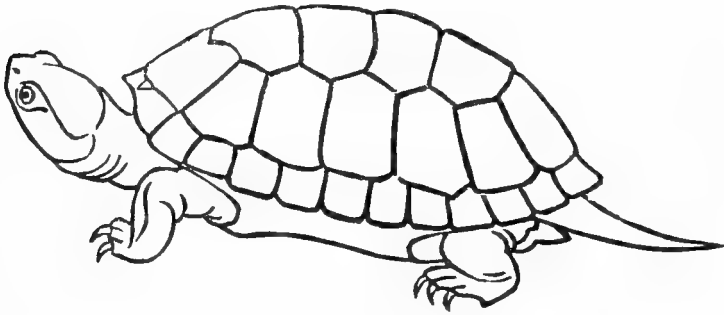
The seventh species (*Zamenis spinalis*) encountered in North China is a long whip-like snake, also harmless, which is found in Kansu. It is of an olive-brown colour with three white stripes down the body, and some white markings on the head. This snake also seems to be fond of watery places, but this is doubtless due to the fact that there is an abundance of small life in such localities, upon which they may feed.

The next group of reptiles to be considered is even more scantily represented than the snakes. There are only three species of lizard in North China and South Mongolia. How many there are in Manchuria I could not say. I came across but one, which apparently was the dullard lizard, (*Eremias argus*) of North China and Mongolia. This belongs to the family *Lacertidae*, the true lizards, and is very much like the little lizard found in Great Britain. It varies greatly in colour and markings. It may be seen along the sides of a dusty road on the plains, amongst the rocks and bushes of the mountains, or in the sand dunes of the desert. Including the tail, it is about four inches in length, though longer specimens are often seen. It is extremely rapid in its movements and makes a pretty addition to the vivarium. Its food is beetles and other small insects. The Manchurian specimens seemed to me to possess longer tails, and to be of a larger size. Another species inhabiting Japan has a bright blue tail.

The next species is the toad-headed lizard, (*Phrynocephalus frontalis*) which inhabits the sandy areas of North Shansi, the Ordos Desert and westward. This pretty little creature is characterized, as the name suggests, by a short toad-like head. It is of a sandy colour, mottled with darker markings. There is a bright mauve patch on each side just behind the arm-pit, while the under surface of the tail is vermillion. These little creatures are very pugnacious, and, when fighting each other, lash their tails from side to side, or rapidly curl and uncurl them over their backs. They live in little shallow burrows, which they excavate themselves. Where they exist at all, they occur in great numbers.

The last lizard to be considered is the gecko (*Gecko japonica*), which is doubtless familiar to the reader. Geckos inhabit the cracks

and crannies in houses, caves and rocky cliffs. They can crawl about on flat perpendicular surfaces, each toe being supplied with a sucker, which will even cling readily to glass. They are very plentiful in the houses of Tientsin and Peking. They live upon flies, mosquitoes, centipedes, scorpions and other vermin. Their bodies and heads are flat; they have very wide mouths and prominent eyes. They are of a dull grey colour, admirably adapted to concealment on rock or brick surfaces. They lay large, perfectly white eggs, which being soft when first deposited, stick to the rock, subsequently hardening. The Chinese are very much afraid of these harmless little lizards, which they call Shieh hu, (scorpion tiger). They can be easily tamed, and without being placed in confinement will soon learn to come out of their hiding places daily to take milk or water.



THE TERRAPIN (*Clemmys japonica*).

Of the two turtles, or properly speaking, tortoises (the word turtle being used by zoologists to designate certain marine forms in which the front feet are modified into flippers) found in North China, one, the terrapin (*Clemmys japonica*) does not seem to extend northward much beyond the valley of the Wei Ho in Shensi. At least it is only in that valley and in Anhui that I have found it. The terrapins are water tortoises, usually rather small, with flatter bodies than is usual with the land tortoises. They are vegetarian in diet.

The mud-turtle or soft tortoise (*Trionyx sinensis*) is common in all the rivers of North China and Manchuria. This is a member of a group of tortoises, which are characterized by not having a horny shell as other tortoises and turtles do. They inhabit rivers exclusively and often attain a large size. They make excellent turtle soup. The Chinese mud-turtle is of a greeny-yellow above, lighter and more yellow beneath. It has a long upturned snout, sharp claws on both front

and hind feet, which are also webbed. These turtles bite savagely and have to be handled with great care. They are carnivorous and may be caught on a hook and line with flesh bait and worms. I have frequently seen them sunning themselves on river banks and projecting rocks. They are very alert and dive into the water at the least sign of danger. I have often shot at them, but have only twice succeeded in securing specimens when shot. Even these revived after a little while, and though full of pellets lived on until they were placed in alcohol. Perhaps there are no animals so tenacious of life as turtles and tortoises. A turtle's head will bite hours after it has been severed from the body.

CHAPTER XXIV.

FROGS, TOADS AND SOME FRESH-WATER FISH.

HITHERTO our studies of the animal life of North China have been confined almost entirely to land forms. True we have discussed the aquatic birds, but after all these are in a sense inhabitants of the dry land, and spend most of their time on *terra firma*, only resorting to the waters in search of food. At other times many of them are engaged in long migratory flights, and so might almost be looked upon as aerial. Amongst mammals the otter is the only species which could be called aquatic.

What, then, of that wonderful world below the rippling surfaces amongst the weeds of China's many waters? What about those seemingly quiet depths, to a great extent beyond our ken, peopled with myriads of busy active creatures, whose lives are just as surely made up of joy, pain, love, courtship, war and tragedy as those of the more advanced forms of life in the upper-world? May we not in a small part enter into it, learn something of its denizens and so derive much of pleasure and instruction?

It is to be regretted that, though there is plenty of water in this country, so much of it is of that yellow turbid nature that gives its name to the mightiest of our northern rivers. In consequence it loses to a great extent much of the charm and attractiveness that water usually has for us. One can scarcely imagine anybody getting enthusiastic about the sub-aquatic fauna that he might suspect of being there, yet cannot see, as he stands on the bank of the Pei Ho and watches that muddy flow. Even in the canals, where the current is so slow that one would think nothing could be carried in suspension, the same all-pervading, infinitely minute particles, which trace back their origin to the Gobi Desert, are continually being stirred up by the passage of boats, till nothing below the wind-kissed surface is discernable.

There are, however, a few sheets of clear water, where the weeds grow rank, and where an infinite variety of crustaceans, molluscs, insects and the higher forms of life that prey upon them and each other may be seen and studied with ease. Such stretches occur in some of the marshes to the east of Pao-ting Fu and in the San-chia-tien Lake further down the Ta-ching Ho. Sometimes also the flooded parts round this settlement are sufficiently clear to render them interesting, while many of the rivers towards their sources in the mountainous areas are beautifully transparent.

The subject of this chapter, however, is not so much the lower forms of aquatic life, interesting though they may be, but rather a few of the higher forms, belonging to that great group, the cold-blooded vertebrates, but one branch of which (the reptiles) has as yet come under our notice.

First, then, let us take the amphibeans, or batrachians, as present day Zoologists prefer to call them: those remarkable creatures, whose lives begin in a sphere of jelly, laid by a solicitous parent in the cool depths of some pond or permanent stream, go through a period of fish-like existence, and finally, developing limbs, discard the fish-form for that of a dry land quadruped. Has the reader ever thought what a wonderful life history that is? It is more than a life-history, it is the history of a race. First the protoplasmal sphere, then the tiny notochord and first primitive muscles of the earliest type of fish, followed by a development of gills, eyes, viscera and other adjuncts of a higher piscine form. Next the growth of limbs, absorption of the gills and sealing of the gill slits, and at last the disappearance of the tail, the expansion of the mouth and the completely changed mode of life. In the growth of a few short weeks is illustrated the development and evolution, through countless cycles, of a highly specialized and distinct organism, to wit—the common frog.

Anyone, who has sufficient time to get a good sized bottle, and secure a pair of spawning frogs may witness the whole of this interesting process, and an instructive pastime it will prove.

There is not a great variety of frogs in North China, very few distinct species having been recorded. We have none of the little tree frogs and other peculiar kinds found in the tropics. The edible frog (*Rana esculenta*) is very common especially in the marshy districts. It is known to the Chinese as T'ien-chi (field chicken), doubtless on account of its edible qualities. It is sold in the markets of Tientsin at the rate of two for one cent, and cooked

rightly is hard to beat. The flesh of this creature has been described as a cross between that of a sole and a spring chicken.

In colour the edible frog varies from a light cream-yellow to a dark green, the belly and under surface of the legs being lighter than the upper parts. There are usually two white stripes running from the back of the eye to the crutch. Just behind the eye is a disk, which, when the frog croaks, is blown out into a bladder. Like all frogs this species is a wonderful jumper. It spends most of its time in the water, coming to the surface to breath. Its food consists of all kinds of insects.

The little brown frog (*Rana japonica*) is found in nearly all the mountain streams of the interior. Its colour also shows considerable variation, ranging from a light buff to a deep brown, sometimes almost black. In the darker specimens the under surface of the legs are often red in colour. This species has broad black bands extending from the tip of the nose along the sides of the head, encircling the bright golden eyes.

Besides these two common members of the genus *Rana*, two others have been recorded, namely *R. reinhardti* and *R. nigromaculata*. The latter is common in the vicinity of Chin-wang-tao, and is of a brown and green colour spotted with black.

In the mountain streams of Shantung occurs the fire-bellied frog (*Bombinator igneus*), an elegant little creature with the back and upper parts green, and the belly and under part brilliant orange-red. The latter are marked with black marblings. It is thus a beautiful addition to the aquarium. It is small in size, not exceeding two inches in length. The skin is very rough, more like that of the toad.

Of the true toads (*Bufo*) there are only two species recorded. These are Radde's toad (*Bufo raddei*) and the common toad (*B. vulgaris*). The first is a handsomely marked variety, not unlike the natterjack toad (*B. calamita*) of Europe. The female is more handsomely coloured than the male, being of a light olive-buff colour marbled with dark brown. The male is of a light greeny-brown, without marblings. It is very common in North Shensi and even in the Ordos Desert. During the dry season it burrows deep into the loess or sand, and so preserves itself from dessication. It spawns in the small rivers, mountain streams and lakes, but otherwise keeps away from water.

The common toad, though found nearly all over the world, is far less common in North China than the foregoing species. It is of a dull earth-brown colour, and would be an ugly creature indeed were it not

for the wonderful gem-like eye. It is Shakespeare who has said,
the toad, ugly and venomous,
 Wears yet a precious jewel in his head.
 referring doubtless to the creature's wonderful eye.

To which, if either, of these species a very large toad that I have frequently come across belongs I do not know. This variety is remarkable both for its size and the great number and size of the warts upon its skin.

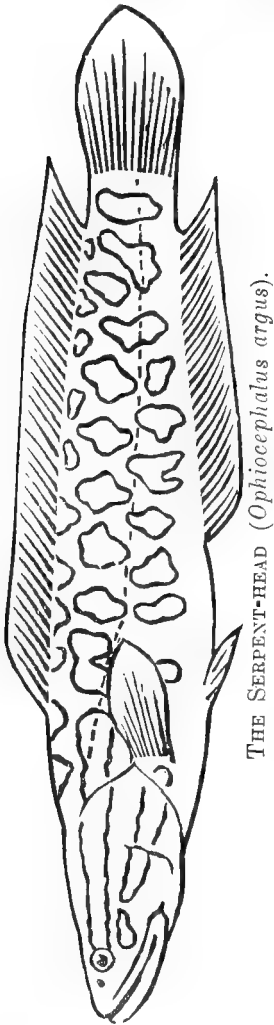


RADDE'S TOAD (*Bufo raddci*).

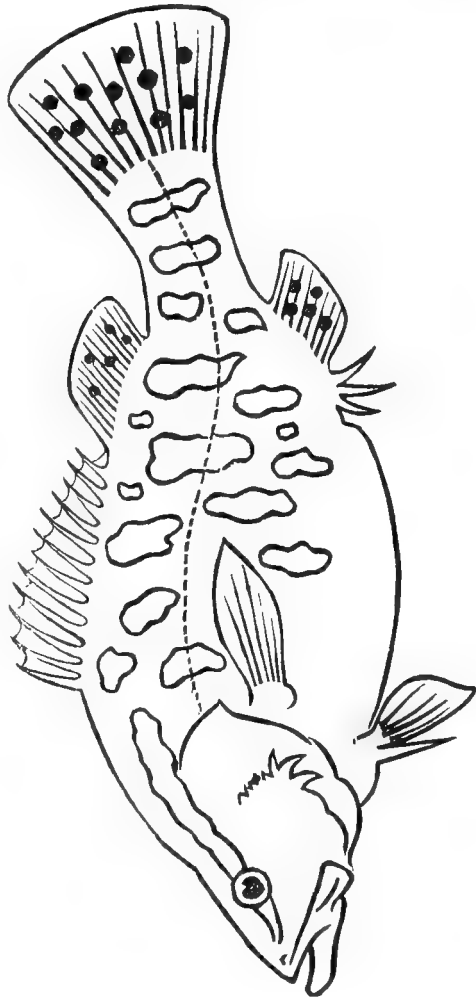
I have never yet come across anything like the newts or salamanders in North China, though some members of this group exist further south, notably the giant salamander (*Megatobatrachus maximus*) of Central and West China, where it occurs in the mountain streams. This large and ugly creature was one of the numerous discoveries of Armand David, and it is very rare. Doubtless the same unfavourable climatic conditions that seem to account for the poverty in the reptilian forms of life, also have an unfavourable effect upon the batrachians.

Turning from these semi-aquatic denizens of the swamps and rivers, we come to a much more richly represented group of cold blooded

vertebrates, namely the fishes, though here again, especially in the interior, the dryness of the climate and the extremes of heat and cold have severely handicapped certain forms in the struggle for existence.



THE SERPENT-HEAD (*Ophiocephalus argus*).



THE CHINESE PERCH (*Siniperca chuatsi*).

North China is very far indeed from being an angler's paradise, in fact it is doubtful if any Europeans out here go in for angling to any extent. There is one ardent disciple of Walton, who spends some of his Saturday afternoons fly fishing on the ponds and canals round the Tientsin Race Course, and he tells me he often has good sport. Another gentleman of similar tastes ordered out expensive sets of rods,

tackle, hooks and flies for fishing on the Pao-ting Fu lakes, but when, some years later he made me a present of his entire outfit, its remarkably new appearance told a significant tale.

The reason for this sad state of affairs is not difficult to find, for not only are the rivers of North China notoriously muddy, and so unsuitable for angling as a fine art, but so keen is the struggle for livelihood amongst the teeming human population that every lake, canal and river is dredged and scoured for the fish it contains. A hundred and one different means of trapping and netting are resorted to by the natives. Nothing taken, no matter how small, is ever put back to grow; no variety, however worthless from a European's point of view is discarded. The wonder is that there are any fish at all, and the reader will not be surprised to learn that North China is comparatively poor in the variety of its finny population.

Still there are a few species, which are worth considering, if only on account of their scarcity. The Mandarin fish (*Siniperca chua-tsi*), a species of perch or bass is abundant in the rivers and lakes of North-eastern China. I have not come across it in the west. This handsome fish seems to take the place out here of the common perch in England, though, as a matter of fact it more closely resembles the ruffe (*Acesina*) in appearance. It has very much the same shape, the head and nose being somewhat more pointed. A large fin extends down the back to the tail, being divided into two distinct portions. The anterior part is made up of twelve very strong sharp spines joined together by a membrane. The posterior part, which is really the hinder dorsal fin, is like an ordinary fin. The pelvic fins also are armed each with a strong, sharp spine, while the anal fin has three such weapons. The opercular, and preopercular gill plates are also armed with spines. When freshly caught the fish sticks out all these spines, and by its rapid contortions can inflict deep and painful wounds. There seems to be some sort of poison in the spines, for the wounds thus sustained will cause the affected limb to swell up and ache badly. In the cuisine this fish holds rank above all the other Chinese species.

The miller's thumb (*Cottus gobio*?) is a small fresh water fish nearly related to the gurnards, which, except in the absence of the finger-like rays of the pectoral fins, it closely resembles. It is an exceedingly ugly fish, with its heavy toad-like head, short thick body, large fins and dull brown colour. It is also known as the bull-head. It is found in

the rivers of Chihli and southward, but I have not come across it in the west. The same species occurs in Northern Asia and Europe, and is very common in Great Britain.

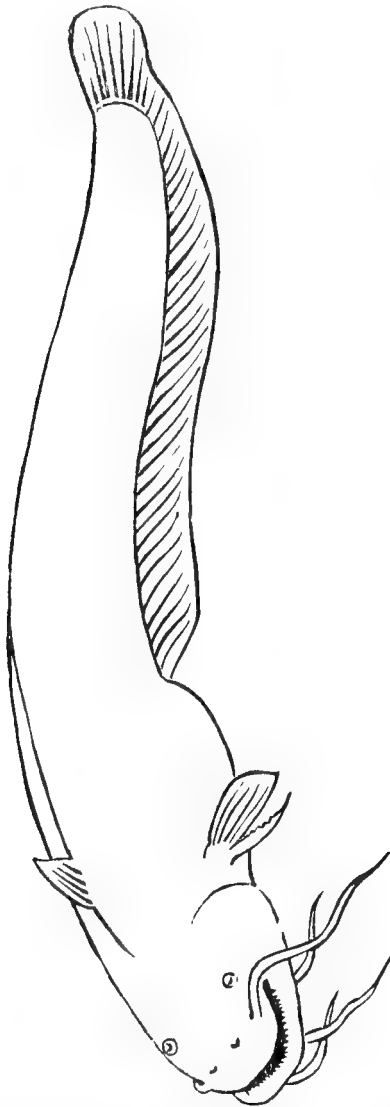
Another little fresh water fish is the stickleback (*Gastrosteus sinensis*) recorded by David. I have never seen a specimen, but it is said to inhabit the waters of Chihli. Sticklebacks are noted for building nests, in which to lay their eggs, guarding the latter against all invaders with a spirit and reckless daring one would hardly expect in so low a form of life. They make splendid additions to the aquarium, being probably more interesting, because having more character and more remarkable habits, than any other fish. The males are fierce fighters and ardent wooers. They tease, it would almost seem for the mere fun of the thing, the other inmates of the aquarium. In the mating season the males, at least in the common three spined species of British streams, are brightly coloured with crimson and blue.

The serpent-head (*Ophiocephalus argus*) is a peculiar fish that occurs in great numbers in all the waters of Chihli. It derives its name from the marked resemblance of its head to that of a snake. This is very long in shape, with the eyes set well forward. The markings also add to the illusion. The body is long, with a fin extending along the whole length of the back, and another along the ventral surface, from behind the belly, which is well forward. The tail is rounded. The whole of the body is marked with bars and blotches of a dark olive-grey colour upon a lighter ground. The fins and tail are spotted. This fish can withstand periods of drought, when it burrows into the mud and apparently becomes torpid. It is also common in the Manchurian rivers, though it may be looked upon more as a swamp than a river fish. The flesh is coarse. The Chinese name is Hei-yu (Black fish).

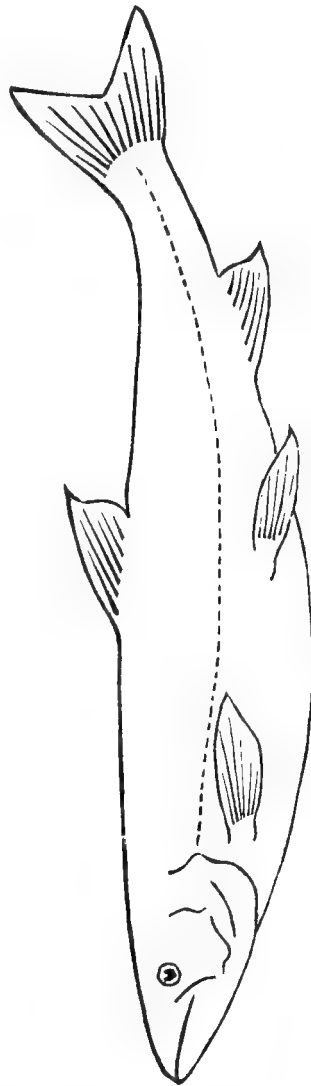
Related to the serpent-head is the beautiful little paradise-fish (*Polyacanthus opercularis*), which is supposed to be a cultivated variety of some hitherto undiscovered wild species. In South-east China several species inhabit the rivers. The domestic species is of a golden colour barred with red. It has greatly elongated dorsal and anal fins and tail. It is very easy to keep, and breeds freely.

The wels (*Silurus assotis*) belonging to the catfish tribe is very common in the muddy waters of the North China rivers. It might well be called the mud-fish, were it not that the name is already used to designate certain lung-fishes of South Africa and South America. The wels has a long, somewhat eel-like body, a large head with an enormous mouth. The latter has several pairs of long filamentous appendages

growing from the jaws. The dorsal fin is very small, but the anal fin more than makes up for this by extending from just behind the belly right along the elongated body up to the tail-fin, to which it is joined.



THE WELS (*Silurus asotus*).



Elopiscthus dauricus.

The eyes, placed on the upper surface of the broad, flat head are very small. There are no scales, in which particular, also, the fish bears resemblance to an eel. In colour it is of a dark olive-brown, the lower

surface of the head and the belly being white or light yellow. It attains a length of two or more feet. The flesh, though of a somewhat muddy flavour, is tender and sweet, and in many places, being the only boneless variety of any size, is greatly esteemed. The Chinese name is "Nien-yu."

Another member of the cat-fish family (*Pseudobagrus fulvidraco*) is also to be found in these waters. It is much smaller than the wels, has a shorter body and a large dorsal fin, with a stout barbed spine in front. It is of a bright greenish yellow colour. The mouth is also smaller. Otherwise the two species are very similar. Both are easily caught on a line baited with a worm or piece of meat.

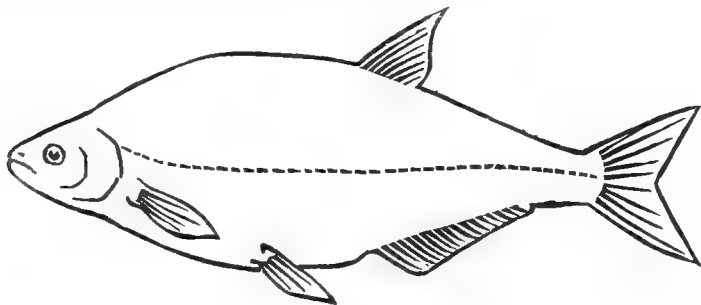
All over the marshes of the flatlands a peculiar species of eel occurs. It has nothing in the way of fins, and so resembles a snake in appearance. Even the gills are not easily detected, being small and inconspicuous. It is of a dark brown colour covered with vermiculated markings of an even darker shade. It reaches a maximum length of three or four feet, and is very good eating. It is particularly plentiful in the marshes of the Wei Valley in Shensi. It is known to science as (*Monopterus javanensis*).

Another species of eel (*Anguilla pekinensis*) also occurs. It is like the European eel, from which it differs but slightly.

One of the commonest fish of North China is the carp (*Cyprinus carpio*), which figures so largely in Chinese and Japanese art, and also on their menus. It occurs in the waters of all the rivers and lakes. This fish often attains a large size. It is particularly abundant in the Yellow River, where it is caught in large numbers in late autumn and kept in specially reserved tanks. When winter comes on the fish are taken out, and water poured over them. The water freezes, forming a coat of ice over the fish, in which condition they are transported to all parts of the northern provinces, and fetch good prices. The Chinese name is Li-yu.

The small carp (*Cyprinus canassius*) does not reach so great a size as the foregoing species, but nevertheless attains a weight of two or three pounds. This is the parent stock of the gold fish, from which the Chinese and Japanese have bred such finny marvels as the lung-yu (dragon-fish). The remarkable thing about these highly specialized fish is the rapidity with which they will revert back to the parent form, when left to propagate their kind in a natural state. On the other hand, the wild form, under certain favourable conditions, will develop the typical golden colour of the common gold fish. The wild form, though

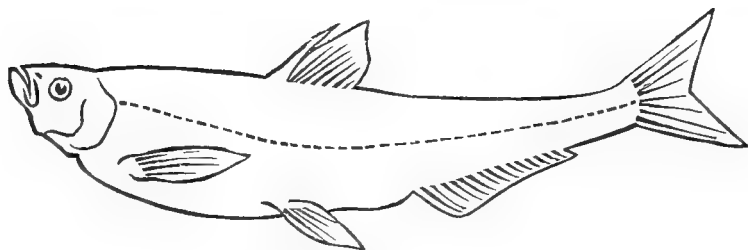
palatable, is of a muddy flavour. The Chinese name is Chi-yu. It is one of the few species that can exist in stagnant water, and is therefore frequently introduced into artificial ponds and lakes, where if it be well fed, it soon assumes a rich bronzy colour.



THE BREAM.



THE BLEAK.

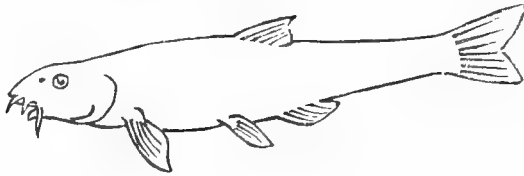


THE CULTER.

Besides these two very common species there are a number of others belonging to the carp family (*Cyprinidae*), namely, the bream (*Parabramis pekinensis*); the roach (*Leuciscus curriculus*), two species of bleak (*L. aethiops* and *L. idellus*), the gudgeon (*Pseudogobio rivularis*), the culters (*Culter recurviceps* and *C. erythropterus*) and their allies *Pseudoculter pekinensis*, *P. exiguus* and *Hemiculter leucisculus*. The culters are peculiar fish with sharply upturned mouths and protruding lower jaws.

In the mountain streams, occurs a small fish related to the minnow (*Phoxinus sp.*). Where there are good permanent streams this species attains a length of six or seven inches. It is very good eating, when served up as white-bait, and in some places occurs in great numbers.

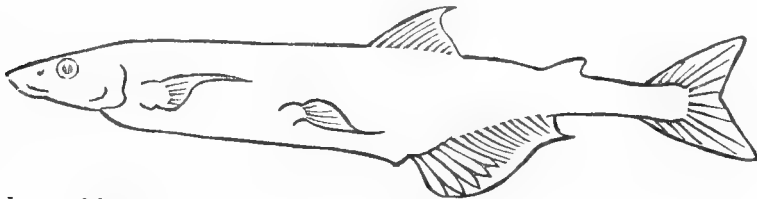
Another inhabitant of the mountain streams is the little loach (*Cobitis tinia*). There can be no doubt that this fish can survive protracted periods of drought, when all the mountain streams in which it lives dry up. How it does this is not known, but it probably buries itself deep down in the mud or sand and undergoes a process of suspended animation. Be that as it may, when the rains come, refilling the streams which have been perfectly dry for so long, this little fish appears almost immediately.



THE LOACH (*Cobitis tinia*).

Another species is the giant loach (*Misgurnus anguillicaudatus*), which, however, is found more in the permanent streams, and also occurs in the large rivers and marshes. This is very much more eel-like than the smaller species.

Though the pike (*Esox*) does not occur in Chinese waters, a species is very common in the streams and rivers of Manchuria, which find their way into the sea on the east side of Corea. There it is known to the Chinese as "kou-yu" (dog fish).



Salanx chinensis, A SMALL TRANSPARENT SMELT-LIKE FISH OCCURRING IN THE CHIHLI ESTUARIES.

Elopichthys dauricus, a very large fish not unlike the salmon, occurs in the Yellow River, and in some of the larger rivers of Chihli,

Mongolia and Manchuria. It reaches a weight of 30 lbs. and upwards, and a length of over three feet. The flesh is very good, and in the Tientsin markets it is sold as salmon, for which it makes a good substitute.

A trout (*Plecoglossus altivelis*) is to be found in the streams of the Chin-wang-tao and Shan-hai-kuan districts; but such of the local piscators as have tried the fishing have reported upon it unfavourably. It is the same species that occurs in Japan. At least two species of trout inhabit the rivers of Eastern and Northern Manchuria, but whether they have been named by scientists I do not know.

Lastly we have the sturgeon (*Acipenser mantschuricus*), which occurs in the Yellow River and sometimes even in the smaller rivers of Chihli.

The sturgeons, with the sharks are interesting as forming a connecting link between the fish of the present geological epoch and those of past ages. They have *heterocercal* or partially forked tails, which is a characteristic of very primitive types of fish. There are no fossil remains of fishes with *homocercal* or completely forked tails, which is characteristic of the modern fishes such as all of the foregoing species.

The sturgeon is found also in Manchuria, and in all the rivers of Siberia and Russia, whence comes that famous delicacy *Caviare*, which is nothing more nor less than the spawn of this fish.

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